

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
No. 3009 MAP

REPORT ON  
THE GEOLOGICAL AND GEOCHEMICAL SURVEY  
ON THE NIMPKISH GROUP  
924/9W FOR  
ACHERON MINES LTD.

3009

REPORT ON

THE GEOLOGICAL AND GEOCHEMICAL SURVEY

ON THE NIMPKISH GROUP

FOR

ACHERON MINES LTD.

October 8, 1970

Vancouver, B.C.

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## REPORT ON

### THE GEOLOGICAL AND GEOCHEMICAL SURVEY

#### ON THE NIMPKISH GROUP

##### INTRODUCTION:

The Acheron Mines Ltd. Nimpkish Group consists of 40 contiguous mineral claims located east of Nimpkish Lake and north of Storey Creek.

The claims are underlain by members of the Vancouver group intruded by coast intrusions. Several complex sulphide deposits associated with magnetite or skarn zones are known within the general area.

Work up to date consisted of reconnaissance geological mapping, soil and silt sampling during June 1970 under supervision of the writer.

##### LOCATION AND ACCESS:

The Acheron-Nimpkish group is located approximately 20 miles south-southeast of Port McNeill on northern Vancouver Island and some 180 miles northwest, as the crow flies, from Vancouver. Geographical co-ordinates of the group are approximately 126° 55' west longitude and 50° 21' north latitude.

Access by highway to the claim group is by paved road to Gold River and from there by logging road to the Nimpkish Camp of Canadian Forest Products, from there approximately 1½ miles along the logging railway following Nimpkish Lake or from Vancouver by Pacific Western Airlines to Port Hardy and then by paved highway to Beaver Cove and gravel logging road to the Nimpkish Camp, a total distance of approximately 80 miles from Port Hardy.

PHYSIOGRAPHY:

Topographic relief in the area is moderate to steep. Elevations vary from near sea level to a maximum of about 3,500 feet in the eastern part of the claim group.

The upper elevations are heavily timbered, but at lower elevations, dense second growth and thick underbrush is common.

PROPERTY:

The Nimpkish group of Acheron Mines Ltd. consists of the following 40 contiguous mineral claims:

<u>Claim</u>	<u>Record Number</u>
B 1 - 9	31995 - 32003
E 1 - 22	31936 - 31957
C 1	32048
C 3	32050
C 5	32052
C 7	32054
C 9	32056
C 11 - 14	32058 - 32061

GENERAL GEOLOGY:

Regional mapping of the area has been carried out by the Geological Survey of Canada and is published on a scale of 1 inch = one mile (map no. 1029A).

The Nimpkish Lake area is underlain by volcanic and sedimentary members of the Vancouver group of Triassic age.

This sequence forms a broad anticline which is intruded along its central part by the Nimpkish intrusive, part of the coast intrusion of Jurassic age.

The stratigraphic section of the Vancouver group after Miller is as follows:

Jurassic and/or Cretaceous - Coast Intrusion  
- granodiorite, quartz diorite, diorite

Upper Triassic and (?) Jurassic

Vancouver Group - Bonanza subgroup  
Andesites, tuffs, agglomerates

- Quatsino Formation
- crystalline limestone
- Karmutsen Formation
- andesitic and basaltic flows,  
pillow lavas, minor thin bedded limestone

In the vicinity of the claim group this sequence occupies the southwest flank of a northwesterly trending anticline.

Known sulphide mineralization in the area takes the form of small but high-grade replacement bodies within the limestone or as contact metamorphic deposits associated with the limestone intrusive or limestone volcanic contact.

### HISTORY:

Exploratory work in the Nimpkish Lake area has been concentrated on two groups of showings known as the Kinman Copper group and Smith group.

The location of these showings is approximately 3 miles south-east of and within the Acheron claim group.

Mineralization was discovered in 1928 on Copper Creek a tributary of Kinman Creek. From 1929 to 1930 Cominco did extensive work on the ground. In 1965 Empire Development investigated the showings under an option agreement. The ground is held by Noranda Mines Ltd. at present, and Juniper Mines Ltd. has an option agreement on it.

Mineralization on the property consists of massive replacement bodies over 3000 feet in length along the limestone intrusive contact. Chalcopyrite is the principal ore mineral, but varying amounts of pyrrhotite and sphalerite are present.

Molybdenite-chalcopyrite mineralization has also been found along Copper Creek along strongly altered shear zones.

The Smith group was first staked in 1929 and subsequently explored by Cominco.

There the mineralization consists of irregular lenses of magnetite-chalcopyrite along the intrusive - volcanic contact or galena-magnetite along the volcanic limestone contact. No commercial sized bodies have been found to date.

### RECONNAISSANCE GEOLOGY:

Reconnaissance geological mapping at a scale of 1 inch = 400 feet, has been conducted over the whole claim group.



Ground control was established by chained lines, surveyed railway tracks or creeks surveyed by chain and compass.

Geological mapping showed that the western portion of the property is underlain by members of the Vancouver group. The Karmutsen volcanic, consisting of andesitic to basaltic flows with minor interbedded amygdaloidal bands outcrops along the northwestern boundary of the property.

A small section of Karmutsen volcanic outcrops in the center of the group along the logging railway and is in fault contact with the lower Bonanza sediments. A second section of Karmutsen volcanics occurs on Storey Creek (formerly Smith Creek) and is in fault contact with the quatsino limestone to the northwest, and is conformable to the southwest.

Both segments of the Karmutsen volcanic lie along the same fault zone.

Along Storey Creek the Quatsino-Karmutsen contact is exposed in a waterfall. Here Karmutsen pillow lavas are overlain by quatsino limestone.

Fragments of volcanics incorporated into the limestone indicate a possible unconformity. The attitude of the volcanics where measured is N50°W, dipping at 25° to the southwest.

The quatsino limestone overlays the Karmutsen volcanic and has the same attitude where measured. Although there is an indicated unconformity between the two formations, it is most likely of limited extent.

The quatsino limestone is for the most part thick bedded, light bluish grey and crystalline.

Along the intrusive contact it becomes quite coarse crystalline and is of cream to white color.

Andesitic dykes are plentiful within the limestone and frequently produce narrow skarn zones with minor sphalerite, magnetite and chalcopyrite along the contact.

Minor folding is indicated within the Quatsino but could not be definitely confirmed.

The Bonanza sediments and volcanics outcrop along the south western portion of the property.

Thin bedded argillites and argillaceous tuffs form the base of the Bonanza subgroup. They overlay the quatsino limestone conformable, where the contact is exposed.

Thick andesitic sills intrude the sediments and strike slightly more northerly than the banded sediments.

Along the logging railway in the center of the property a fault forms the contact between the Karmutsen and Bonanza formation.

Drag folding, gouge zones and minor breccia zones are abundant in this area.

In the south eastern part of the claims, the Bonanza sediments are in contact with the quartz diorite of the coast intrusion.

The sediments are well banded, bleached to a white to light grey color and completely silicified.

The upper andesitic flows of the Bonanza are exposed along the southern section of the claims along the railway tracks.

They consist of fine grained light green to coarse crystalline nearly porphyritic andesites interbedded with minor fragmental nearly conglomeritic andesites.

Dips and strikes of the Bonanza are variable, as observed along the railway and some minor folding is present. This is due to a major fault zone following the Nimpkish valley.

#### ECONOMIC GEOLOGY:

Several skarn zones carrying magnetite and chalcopyrite and a replacement and lenses of galena-magnetite outcrop on the zip claims held by Cominco Ltd. This claim group straddles Storey Creek. None of these deposits have been proven to be commercial.

Several narrow skarn zones with magnetite, sphalerite and chalcopyrite have been found associated with andesitic dykes intruding the limestone.

One irregular magnetite zone is amphibole skarn having a possible width of about 30 feet is exposed along the railway track on the Nimpkish group. No information about the attitudes or strike length is available.

#### RECONNAISSANCE GEOCHEMICAL SURVEY:

##### Field Procedure:

The survey consisted of chain and compass lines 1,500 feet apart with samples taken at 200 foot stations and silt samples taken along draws and creeks at 200 foot intervals.

Samples were collected with an auger from the soil horizon immediately underlying the surface humus layer (B horizon). Information concerning soil composition, drainage pattern and vegetation was noted on each station to facilitate interpretation of the results.

The obtained data was plotted and contoured for interpretational purposes.

Testing Procedure:

Soil samples were collected along lines 400 feet apart and 200 foot stations, reconnaissance spacing; or along lines 200 feet apart at 100 foot stations in detailed areas, to sample the oxidized layer immediately below the humus layer (B horizon). At each site notes were recorded regarding soil type, topography, sample depth, and vegetation to facilitate the interpretation of the results.

Samples were packaged in kraft envelopes and forwarded to Chemex Labs Ltd. of North Vancouver. There the samples were dried, screened to -80 mesh and tested for copper and zinc by the atomic absorption method.

Results:

The geochemical survey showed that the best potential for zinc-copper mineralization exists within the Quatsino limestone, to the intrusive contact or the vicinity of andesitic dykes cutting the limestone.

A maximum of 2,500 ppm zinc occurs in the later mentioned area.

Two isolated copper highs, 169 and 224 ppm have been found associated with high zinc.

CONCLUSIONS:

- 1) The Nimpkish group of Acheron Mines Ltd. is underlain by the Vancouver group intruded by quartz diorite.
- 2) Geological mapping showed that the most favorable area for mineralization is along the limestone intrusive contact and in the area of abundant andesitic dykes cutting the limestone.
- 3) Reconnaissance geochemical survey confirmed the above information.
- 4) Minor magnetite and sphalerite mineralization associated with skarn zones has been found along the railway track in quatsino limestone.

RECOMMENDATIONS:

- 1) Detail geochemical survey over the area underlain by the quatsino limestone and along the intrusive contact along 400 foot lines and 200 foot stations.
- 2) Detail geological mapping.
- 3) Magnetometer survey to facilitate the geological mapping and possibly to locate magnetite mineralization and skarn zones.

- 4) Trenching or x-ray drilling to evaluate any anomalous areas found by above program.

Respectively Submitted

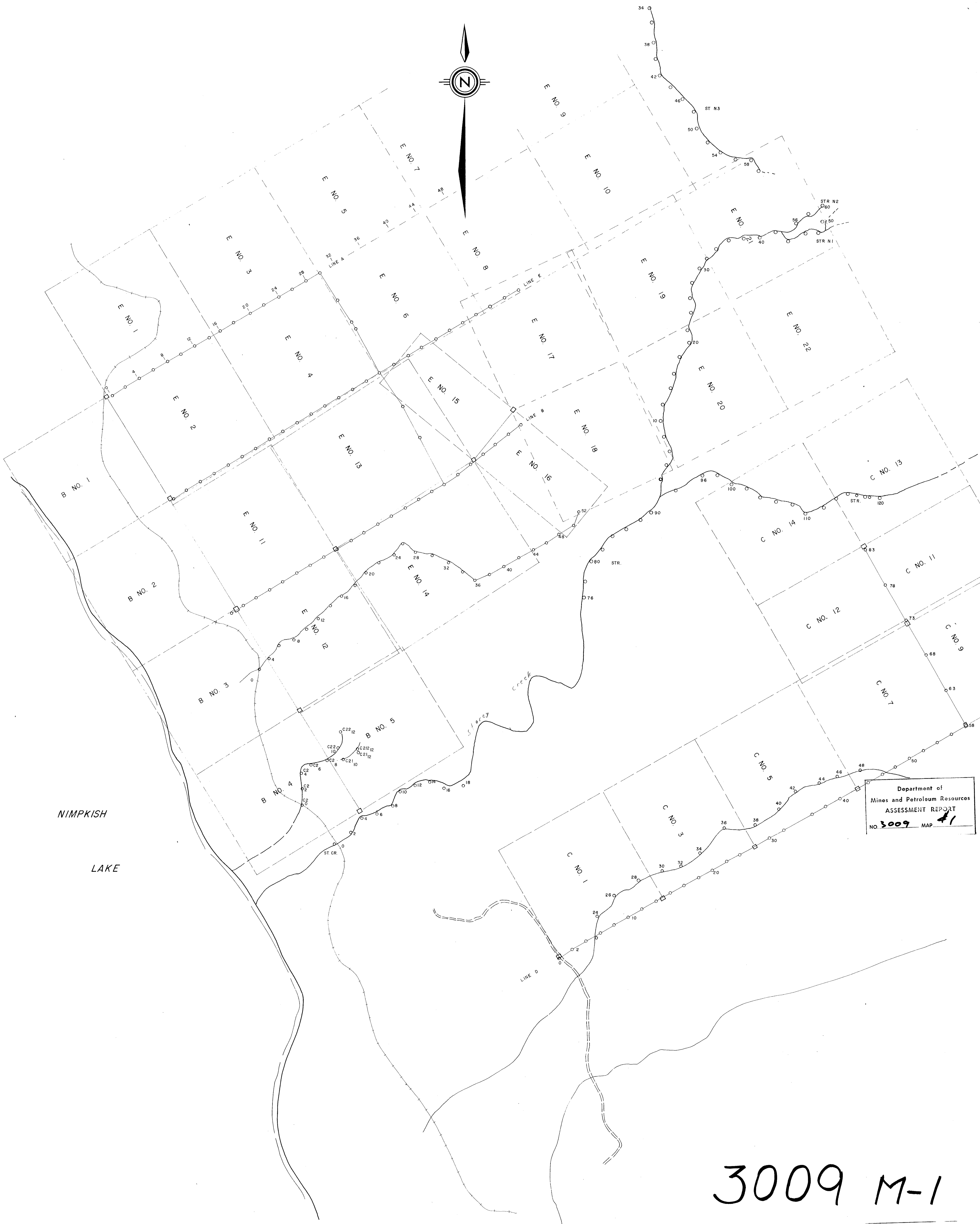
*F Holcapek*

F. Holcapek, Geologist

Endorsed by: *R.H.D. Philp*, P. Eng.

October 8, 1970

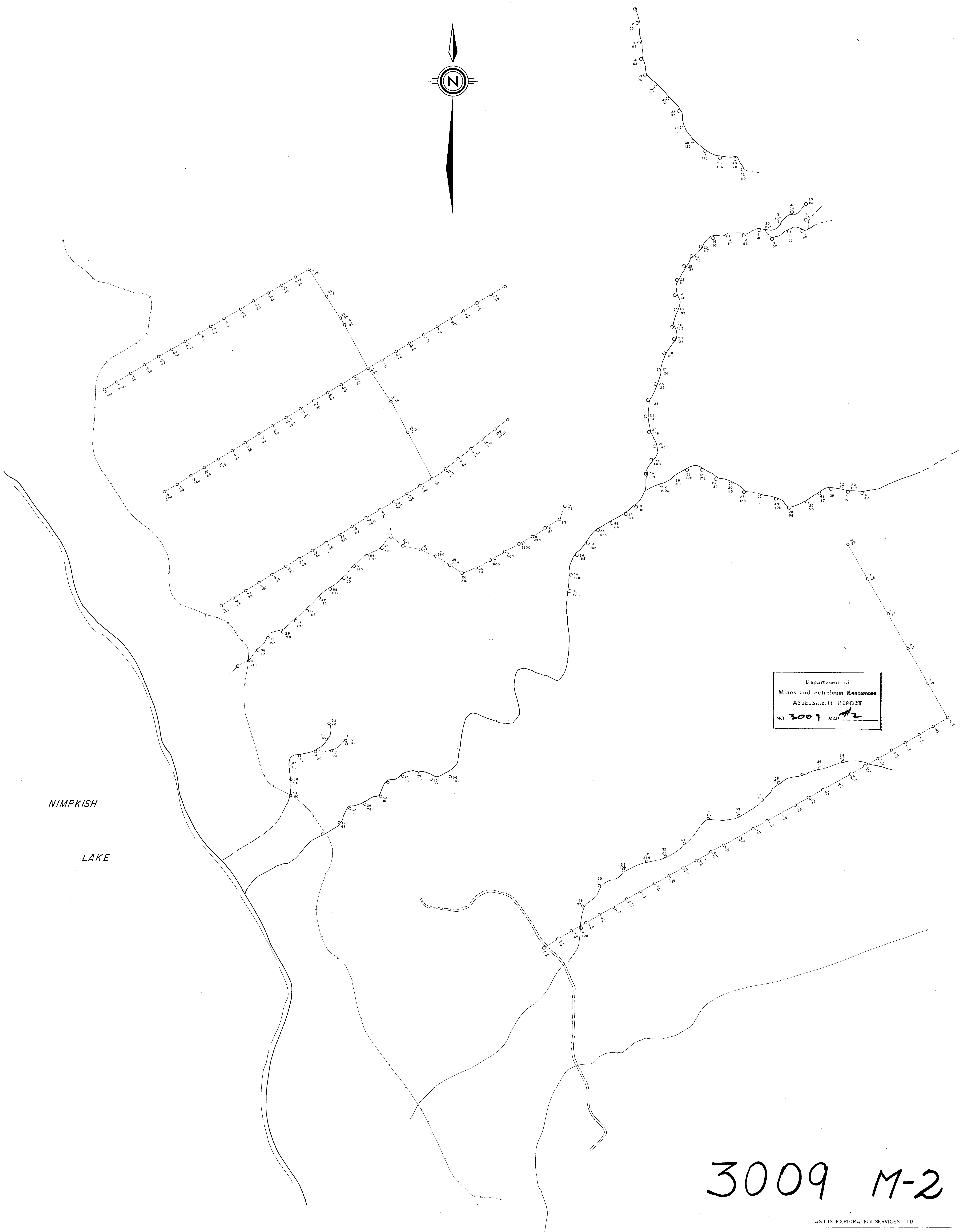
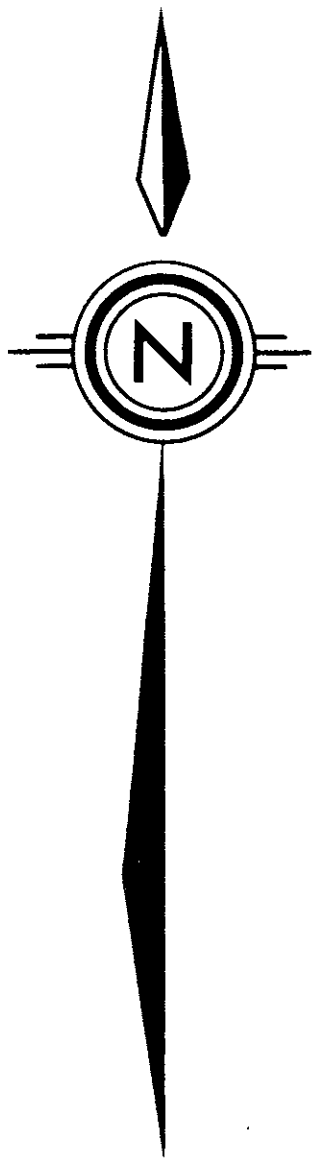
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3009 M-1

AGILIS EXPLORATION SERVICES LTD.	
ACHERON MINES LTD (N.P.L.)	
NIMPKISH LAKE VANCOUVER ISLAND, B.C.	
Base Map & Grid	
DRAWN BY: L.M.	SCALE: 1" = 400'
CHECKED BY: R.P.	DATE: June, 1970



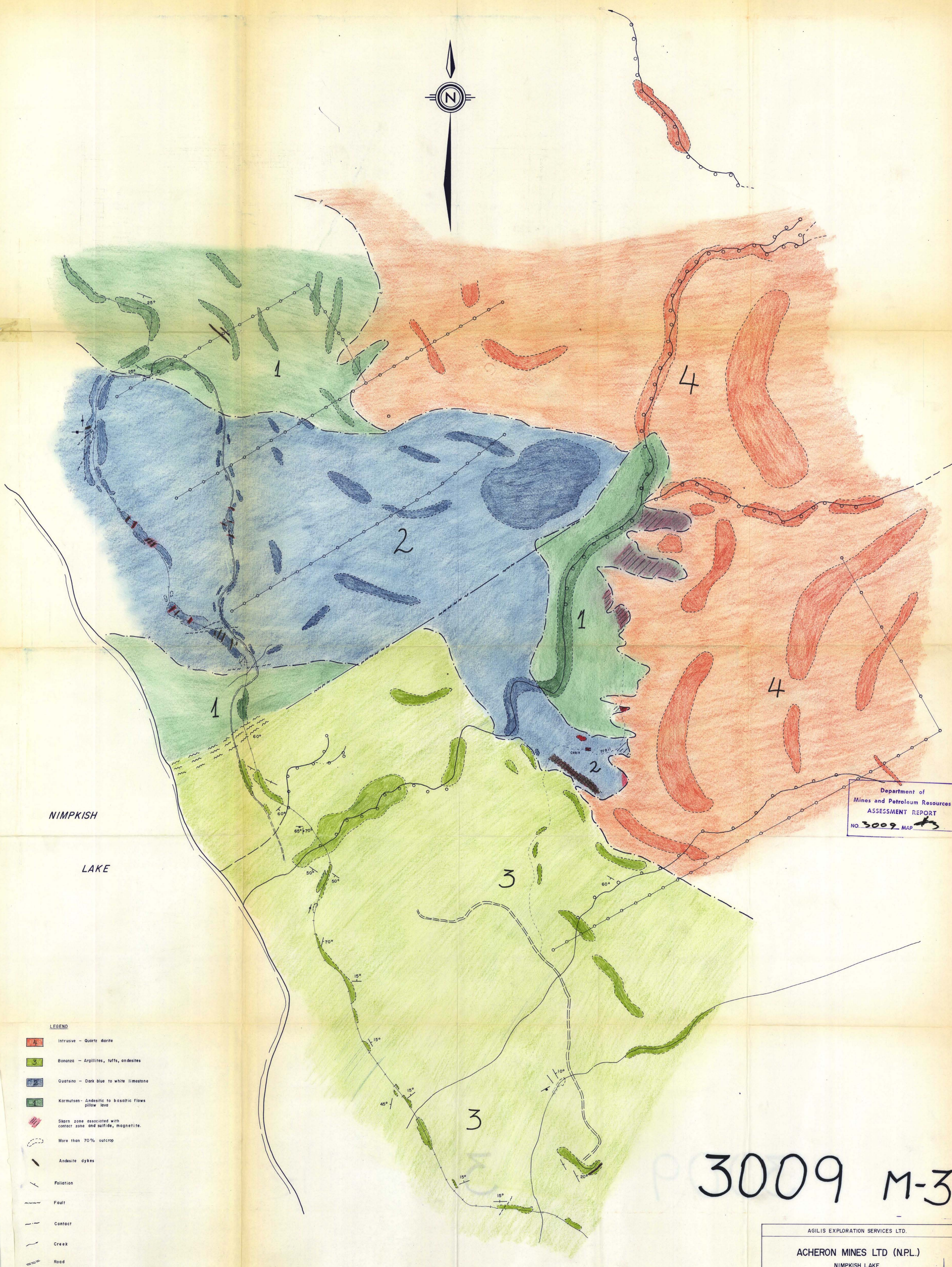
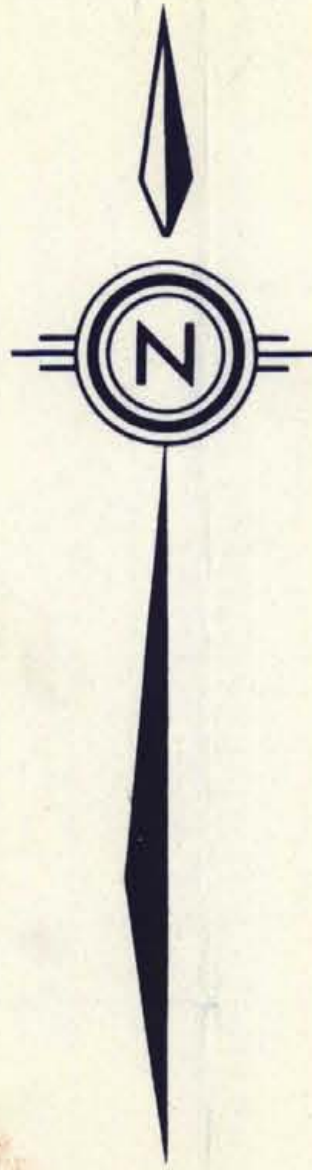
NIMPKISH  
LAKE

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3009 M-2

AGILIS EXPLORATION SERVICES LTD.	
ACHERON MINES LTD (N.P.L.)	
NIMPKISH LAKE VANCOUVER ISLAND, B.C.	
Geochemical Survey <i>RP</i>	
DRAWN BY: L.M.	SCALE: 1" = 400'
CHECKED BY: R.P.	DATE: June, 1970





NIMPKISH  
LAKE

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LEGEND

- Intrusive - Quartz diorite
- Bonanza - Argillites, tuffs, andesites
- Quatsino - Dark blue to white limestone
- Karmutsen - Andesitic to basaltic flows pillow lava
- Skarn zone associated with contact zone and sulfide, magnetite.
- More than 70% outcrop
- Andesite dykes
- Foliation
- Fault
- Contact
- Creek
- Road

3009 M-3

AGILIS EXPLORATION SERVICES LTD.  
**ACHERON MINES LTD (NPL.)**  
NIMPKISH LAKE  
VANCOUVER ISLAND, B.C.  
Geological Survey *R.P.P.*

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