

79-#443-# 7521

OUTCROP GEOLOGY REPORT

PRIME CLAIM GROUP  
SIMILKAMEEN MINING DIVISION

92H-16W  
49°45'N 120°28'W

ON BEHALF OF  
PIPER PETROLEUMS LTD.

by

G. C. GUTRATH, P. ENG.

ATLED EXPLORATION MANAGEMENT LTD.

July 1979

<u>Name</u>	<u>Units</u>	<u>Record No.</u>	<u>Expiry Date</u>
Prime 2	16	410(8)	August 21, 1980

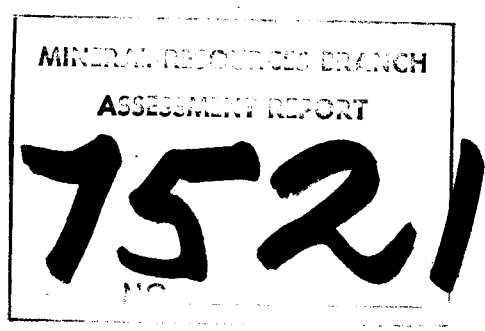
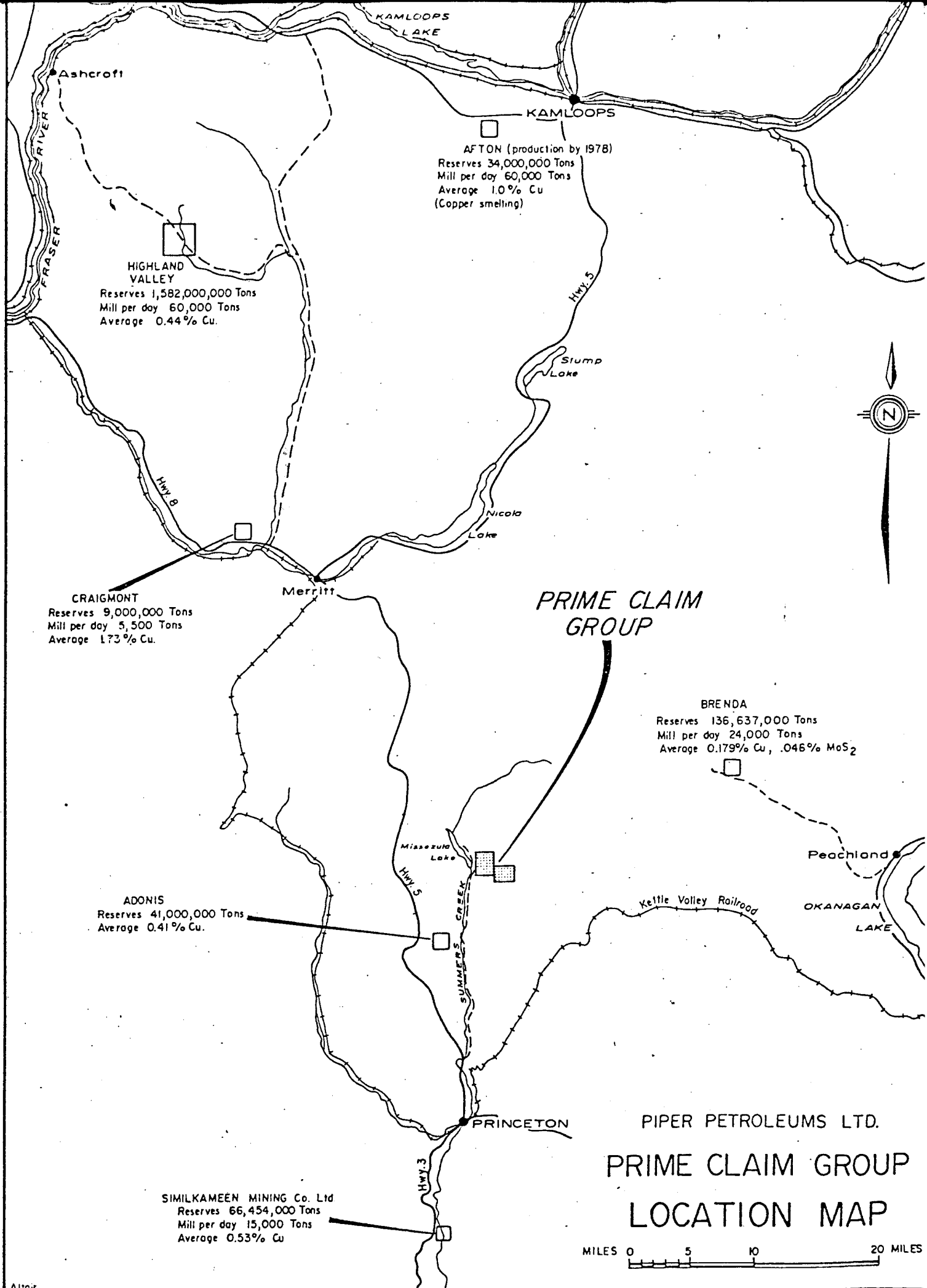


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Outcrop Geology	1:2500



Ashcroft

KAMLOOPS

AFTON (production by 1978)  
 Reserves 34,000,000 Tons  
 Mill per day 60,000 Tons  
 Average 1.0% Cu  
 (Copper smelting)

HIGHLAND VALLEY  
 Reserves 1,582,000,000 Tons  
 Mill per day 60,000 Tons  
 Average 0.44% Cu.

CRAIGMONT  
 Reserves 9,000,000 Tons  
 Mill per day 5,500 Tons  
 Average 1.73% Cu.

Merritt

**PRIME CLAIM GROUP**

BRENDA  
 Reserves 136,637,000 Tons  
 Mill per day 24,000 Tons  
 Average 0.179% Cu, .046% MoS<sub>2</sub>

ADONIS  
 Reserves 41,000,000 Tons  
 Average 0.41% Cu.

Miaszud Lake

Peachland

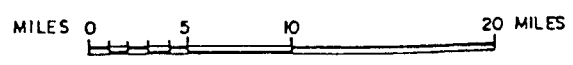
OKANAGAN LAKE

PRINCETON

SIMILKAMEEN MINING Co. Ltd  
 Reserves 66,454,000 Tons  
 Mill per day 15,000 Tons  
 Average 0.53% Cu

PIPER PETROLEUMS LTD.

**PRIME CLAIM GROUP  
 LOCATION MAP**



OUTCROP GEOLOGY REPORT  
PRIME CLAIM GROUP  
SIMILKAMEEN MINING DIVISION

INTRODUCTION

The outcrop geology was mapped in June, 1979 utilizing a grid completed in May 1979. The base line is at N 75°W and is 1200 m. long. There are 11 crosslines at 125 m. intervals totalling 13,650 m.

PERSONNEL

G. Gutrath, P. Eng., Geologist  
(overall supervision, geological mapping and report)  
J. R. Lerner, Technician  
(geological mapping and drafting)  
P. Murphy, field assistant  
F. McKay, field assistant.

WORK COMPLETED

The outcrop geology was mapped on a scale of 1:2500. Special emphasis was given to outlining the copper-mineralized area along the base line between line 2E and line 1W.

LOCATION AND ACCESS

The property is located in south-central British Columbia 22 airmiles north of the community of Princeton. The approximate co-ordinates of the property are 49° 45' north latitude and 128° 28' west longitude.

The property can be reached from Princeton by taking the Merritt Highway north for 8 miles and then turning north on the Missezula Lake gravel road for 18 miles. A number of gravel roads in fair condition gives good access to the majority of the property from the Missezula Lake road.

Leonard

L 2806  
Conglin

NICOLA MINING  
SIMILKAMEEN MINING

SWASH 77  
237(7)  
H 33823  
33821 H  
SIMASH 2

Vinson Lake

Vinson Creek

B.C. 346

Misses  
Dillard Cr.  
PRIME 1  
323 (5)

PRIME  
47 (5)  
B.C. 346

PRIME 2  
410 (B)  
ABASE

PRIME 2  
410 (B)  
ABASE

JANS  
240(7)  
ABASE  
16800  
16700

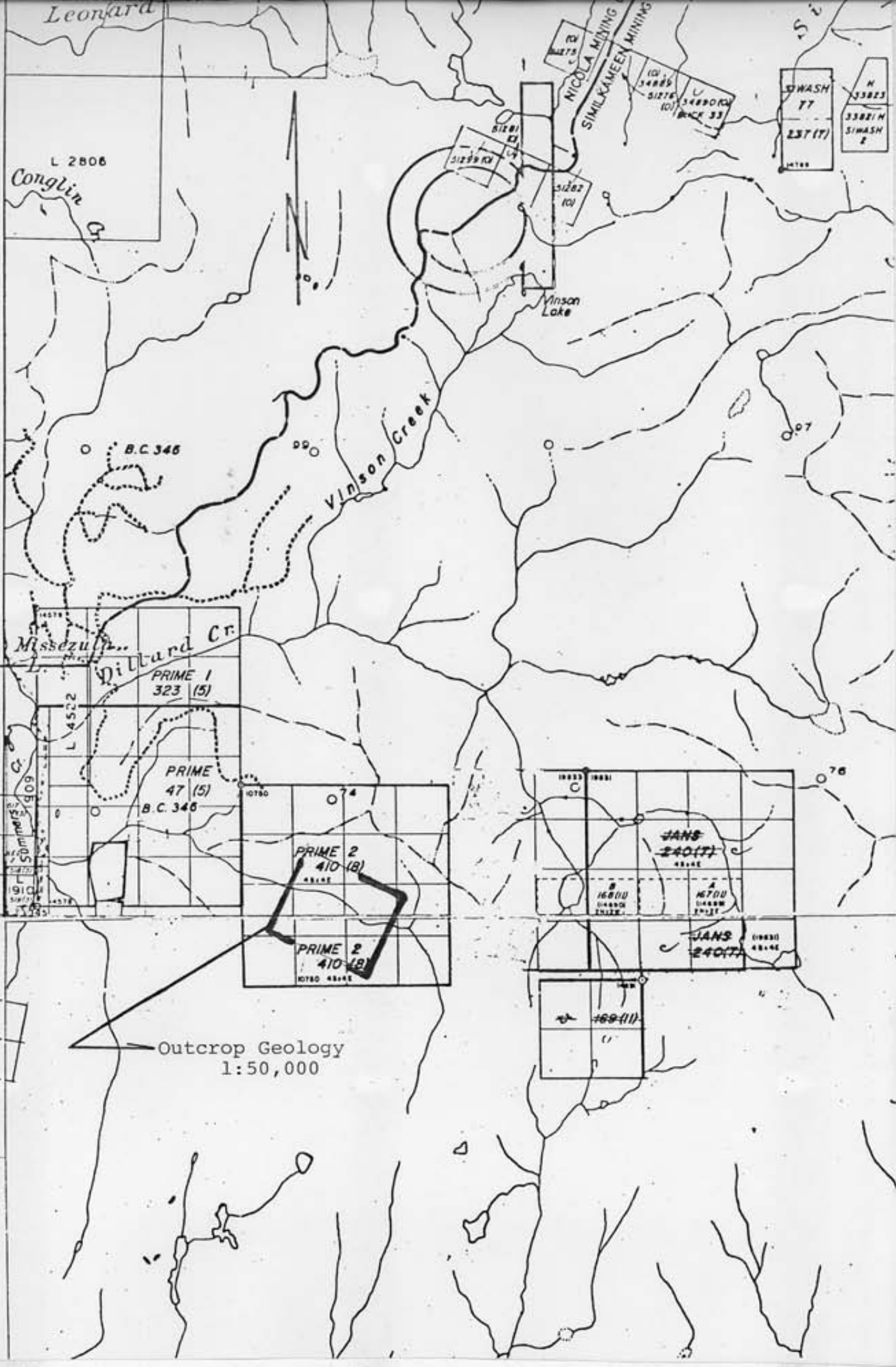
JANS  
240(7)  
ABASE

168-111

Outcrop Geology  
1:50,000

M 92H/9W

92H/9W)



PHYSIOGRAPHY

The Prime Group covers the eastern slope of the Summers Creek Valley from Summers Creek at an elevation of 3200 feet to a rolling plateau area at an elevation of 4400 feet.

The claims are covered by a thick stand of fir, spruce and jackpine.

There is ample water on the property for drill requirements.

CLAIMS

<u>Name</u>	<u>Units</u>	<u>Record No.</u>	<u>Expiry Date</u>
Prime 2	16	410 (8)	August 21, 1980

The Prime 2 claim is located in the Similkameen Mining Division.

GEOLOGY

General

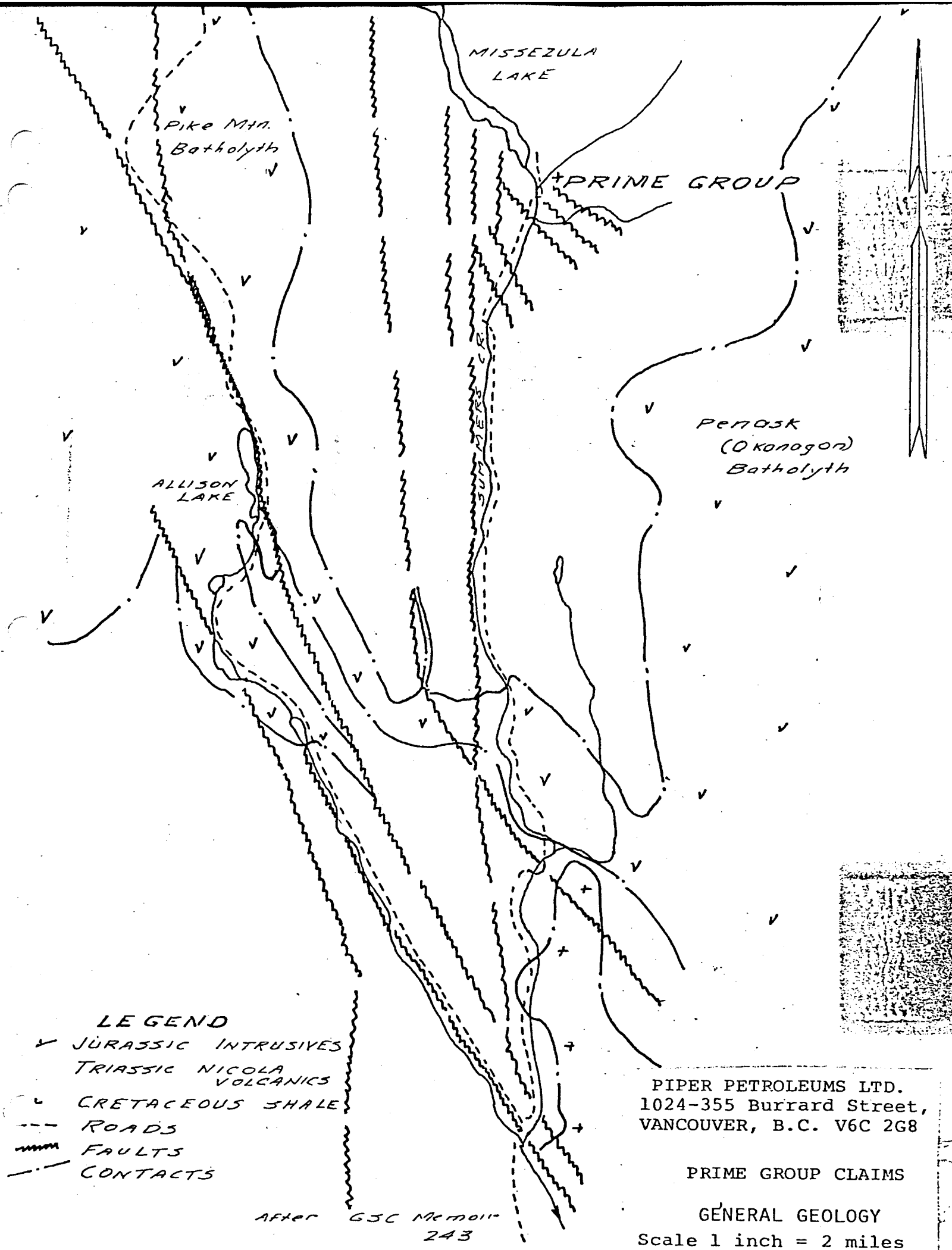
The Princeton-Missezula Lake area is underlain by Nicola Group sediments, andesitic flows, and related volcanics of Triassic age.

This group is within a downfaulted block bounded by major north to northwest striking faults and bordered by Coast Range intrusive rocks of Jurassic age. This fault block has been cut by numerous smaller faults and by a wide range of dikes.

Property

The Prime and Prime #1 are underlain by Nicola Group andesite flows, tuffs, agglomerates and limestone.

These rocks are located within an embayment of the Okanagan granodiorite batholith that lies to the east of the property. Dikes, sills and small stocks of varying composition cut the Nicola Group rocks in the property area.



The rocks have been moderately to highly altered and fractured as a result of the extensive northwest and northeast striking shear zones that are widely distributed throughout the claim group. The claims are bordered on the west by the major north-trending Summers Creek fault.

Numerous copper-pyrite occurrences have been located on the property related primarily to areas of fractured andesite and diorite rock types.

The claim area is largely covered by glacial overburden resulting in bulldozer trenching being an effective way to expose bedrock.

#### Grid Area

Andesite underlies 75% of the grid area. Massive dark greenish grey andesite occurs in numerous large outcrop areas from line 1W to lines 6E from 200 N to the northern edge of the grid. This formation may extend from 1W to 4W along the northern side of the grid but there are no outcrops in the area except on line 2W - 300 N to 400 N where the andesite is cut by a light grey diorite. The andesite along the northern edge of the grid is composed of 40% to 60% fine-grained to medium-grained euhedral to subhedral hornblende phenocrysts in an aphanitic grey ground mass. From 5% to 10% light green, fine-grained crystalline blebs of epidote are scattered through the ground mass. Pyrite content ranges from 1% to 5% and magnetite content is from 5% to 10%.

Along the base line between line 0 and line 3E is an extensive out-crop-trenched area. The predominant rock is an altered andesite that may be transitional with the hornblende andesite to the north. The andesite along the base line has been intruded by a complex diorite dike or dike swarm and has been cut by a number of strong northwesterly trending faults. In appearance the rock varies from a fine-grained altered diorite to a light grey-green altered andesite. This altered andesite has been named a dioritized andesite. It has undergone varying degrees of feldspathic chloritic and silicic alteration. It is moderately to highly fractured and sheared.



Pyrite content varies from 5% to 15% with magnetite from 1% to 5%.

Between line 1W and line 4W along the base line and extending to the north are a series of andesite outcrops forming a broad ridge. The andesite is predominately a coarse dark hornblende andesite porphyry with numerous large (5 cm.- 20 cm.) breccia fragments. Small fragments are common in the andesite along the northern part of the grid area but the coarse breccia fragments are typical of the hornblende andesite on the east side of the grid. The coarse breccia fragments result in a much more irregular weathering surface than the andesite fragments. Pyrite content is less than 1% and magnetite content is from 3% to 5%.

The volcanics are intruded by two intrusive types that may be closely related. The majority of the intrusive rock is a fine grained diorite localized as a small stock or dike between line 0 and line 3E. The northern contact of the intrusive follows the base line in a N 75° W direction. The second contact is 60 to 120 m. to the south and is very irregular. In hand specimen the diorite varies from a light to medium grey color, is fine grained and is predominantly composed of subhedral plagioclase and euhedral to subhedral hornblende crystals. Pyrite content varies from 1% to 10% and magnetite content is under 3%.

Specimen P6 from line 1E - 140 N is a medium grey color, appears very fresh and unaltered and carries 5% to 10% pyrite and less than 2% magnetite. Specimen P4 on line 2W - 300 N has been slightly altered and is not as fresh in appearance as P6. It is a medium grey color and carries from 2% to 3% pyrite and less than 2% magnetite. Specimen P5 on line 2E - 200 S has a light white ground mass with 40% fine grained black subhedral hornblende. Pyrite content is 2% with more magnetite, in the range of 3%.

A coarse grained feldspar porphyry dike cuts the andesites on line 3E and 4E - 160 N. The intrusive is more coarse grained than the diorite and is usually porphyritic. In hand specimen it is light orange in color with coarse grained orange-cream colored feldspar phenocrysts

in a fine-grained ground mass. The phenocrysts are subhedral and can make up to 75% to 80% of the rock. Pyrite and magnetite content is from 1% to 3%. On line 3E and 4E the contacts of the dike are intensely altered with the andesite being a highly oxidized orange color resulting from pyrite-carbonate alteration.

### Mineralization

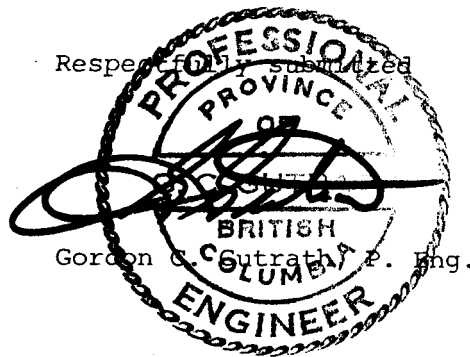
The copper mineralization is of economic interest and is primarily in the form of chalcopyrite with secondary malachite on weathered surfaces. The chalcopyrite is concentrated in the highly fractured and altered andesite between line 0 and line 2E that borders the diorite intrusive to the north and south. There is little or no chalcopyrite mineralization in the diorite.

The chalcopyrite is associated with feldspathic and silicic alteration and normally occurs as disseminated fine grains on fractures or in the quartz and feldspathic veins. Thin, irregular selenite veining is commonly associated with the better mineralized areas but not directly associated with chalcopyrite mineralization. In some areas, such as in the small outcrops along the base line between 1E and 2E, the andesite has been sheared and there is considerable chloritic alteration associated with the chalcopyrite mineralization.

The chalcopyrite content ranges from trace amounts to around 1% and indicates a potential grade of .3% copper in the areas examined.

CONCLUSION

The most extensive copper mineralization has been traced along the base line between line 0 and line 2E for 245 meters and over a width of 80 m. The mineralization in this area is low grade and is associated with chloritic, feldspathic and silicic alteration related to a east-west trending diorite intrusive and an intersecting north-westerly trending fault shear zone. Only minor amounts of copper mineralization were found at other localities in the grid area.

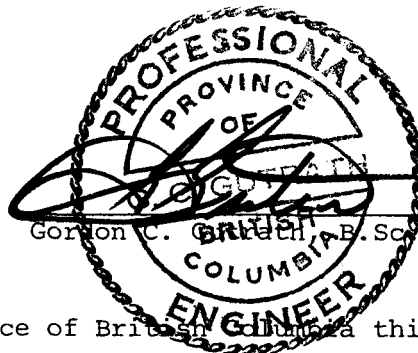
Respectfully submitted  
Gordon C. G. G. G.  
Gordon C. G. G. G. Eng.  
A circular professional seal for a British Columbia Professional Engineer. The seal features a rope-like border and contains the text "PROFESSIONAL ENGINEER" around the perimeter, "PROVINCE OF BRITISH COLUMBIA" in the center, and "Gordon C. G. G. G. Eng." at the bottom. A large, stylized signature is written across the seal.

GCG:bd

ENGINEER'S CERTIFICATE

I, GORDON C. GUTRATH, of 3880 Selkirk Street in the City of Vancouver, in the Province of British Columbia, DO HEREBY CERTIFY:

1. That I am a consulting geologist with a business address of 1640-1066 West Hastings Street, Vancouver, B.C. V6E 3X2.
2. That I am a graduate of the University of British Columbia where I obtained by B.Sc. in geological science in 1960.
3. That I am a Registered Professional Engineer in the Geological Section of the Association of Professional Engineers in the Province of British Columbia.
4. That I have practiced my profession as a geologist for the past sixteen years, and
5. That I am a director and shareholder of Piper Petroleum Ltd.



Gordon C. Gutrath, B.Sc., P.Eng.

DATED at the City of Vancouver, Province of British Columbia this 19 day of October, 1979.

STATEMENT OF EXPENDITURES

Field Work

- G. Gutrath, P. Eng., overall supervision
- J. R. Lerner, Field Technician, geological mapping
- F. McKay, Assistant
- P. Murphy, Assistant

7 days at overall cost of \$250/day ..... \$1,750.00

G. Gutrath, P. Eng.

Report and data compilation \$1,000.00

\$2,750.00

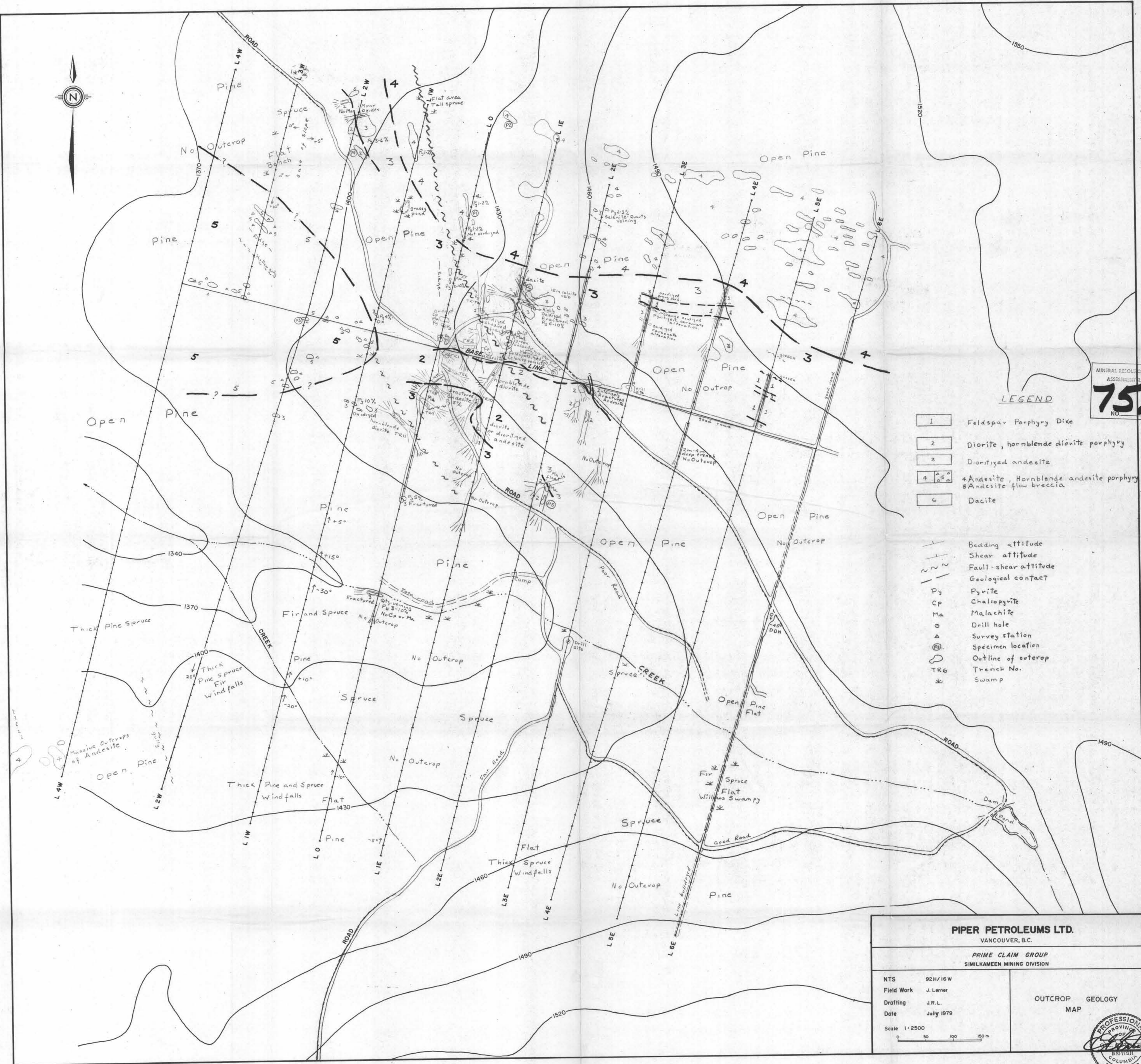




MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**7521**  
NO.

**LEGEND**

- 1 Feldspar Porphyry Dike
  - 2 Diorite, hornblende diorite porphyry
  - 3 Dioritized andesite
  - 4 Andesite, Hornblende andesite porphyry
  - 5 Andesite flow breccia
  - 6 Dacite
- 
- Bedding attitude
  - - - Shear attitude
  - ~ ~ ~ Fault-shear attitude
  - Geological contact
  - Py Pyrite
  - Cp Chalcopyrite
  - Ma Malachite
  - o Drill hole
  - △ Survey station
  - ⊙ Specimen location
  - Outline of outcrop
  - TRG Trench No.
  - \* Swamp



**PIPER PETROLEUMS LTD.**  
VANCOUVER, B.C.

**PRIME CLAIM GROUP**  
SIMILKAMEEN MINING DIVISION

NTS 92H/16W  
Field Work J. Lerner  
Drafting J.R.L.  
Date July 1979

**OUTCROP GEOLOGY**  
MAP

Scale 1:2500  
0 50 100 150 m

