#4604

862441

PRELIMINARY REPORT

ON

PIONEER PROJECT

Similkameen M.D.

92 H 9/W

by

M. R. Wolfhard Feb. 1977

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

PIONEER PROJECT

SUMMARY:

Potential exists for a medium size porphyry copper deposit, within an untested portion of a 300 m to 500 m by greater than 7000 m long linear belt of altered Nicola rocks. This potential should be tested by percussion drilling, at a cost of $20,000.

INTRODUCTION:

PROPERTY: 7 claims, including 59 units, in Similkameen M.D., owned by C. J. Robertson as follows:

CLAIM	# OF UNITS	REC #	ANNIVERSARY DATE
Pioneer 1	12	71	June 23
" 2	12	72	"
" 4	8	186	Jan 10
" 5	8	187	"
" 6	3	188	"
" 7	6	189	"
" 8	6	Staked early June, 1977	

LOCATION: 10 km N 25^{o} E of Princeton, B. C. in the vicinity of Christian Creek in N T S 92 H 9/W. The land slopes gently to the north and north east, from elevation 1000 m to elevation 1300 m. Vegetation includes grassland and pine - fir forest. Exploration season is 9 months, drilling season 12 months.

ACCESS: Exploration is by auto from Princeton, B. C., about 3½ hours by auto from Vancouver. Production access would be by road to Vancouver, or by circuitous rail route from Princeton to Vancouver.

(cont'd)

HISTORY: In 1959 and 1960, Kennco Exploratons (Western) Limited held the southern portion of the Pioneer property as the F. H. claims. They conducted geological, geochemical, and geophysical surveys, did some bulldozer trenching, and reported 4 diamond drill holes varying from 25 m to 100 m in depth. The rancher who owns the surface, and other ranchers, informed us that a fifth hole was drilled west of the other Kennco holes, penetrating 500 feet of Princeton sediments before abandonment. Kennco subsequently dropped the ground, and later owners included AMAX and Bethlehem. In the early 1970's Cop-Ex mining held the northern portion of the Pioneer claims. They did considerable percussion drilling in local areas, at one point causing a stock market flurry with reported results from locations they would not disclose. Placer is reported to have done some drilling on the ground at about this time. Quintana staked the southern claims in spring 1976, mapped and sampled the ground in the summer and fall, and acquired the northern claims when Cop-Ex allowed them to lapse in December.

GEOLOGY:

REGIONAL: The Pioneer property lies within a narrow north trending belt of Upper Triassic to Lower Jurassic, basic to intermediate, volcanics. These Nicola group volcanics are intruded by co-eval plutons associated with porphyry copper mines at Copper Mountain - Inger-

(cont'd)

belle, Highland Valley, and Afton-Iron Mask. A host of other porphyry copper prospects, most of which fall into one of two general classes, are known within this 60 km by 300 km belt stretching from the U. S. border north to Kamloops and beyond. Locally these Nicola rocks are overlain by Upper Mesozoic and Lower Cenozoic rocks, often in fault-bounded basins.

One of the two types of porphyry copper deposits, usually associated with a calc-alkaline intrusive suite, exhibits well-developed, megascopically-obvious concentric alteration zoning. The Highland Valley deposits are of this type.

The second type of deposit, often of good grade, is commonly associated with alkaline intrusive and extrusive rocks. This type shows poorly-defined concentric alteration zoning. In particular, an annular zone of strongly seriticitized or argillized rock peripheral to, and useful as a guide to ore is absent. Exploration for this type of deposit under cover must be guided by the presence of mineralization at the edge of cover. Subjective assessments of the direction to and intensity of the center of mineralization are dangerous. Within the Nicola belt any covered area large enough to contain a mine size deposit, surrounded on one or more sides by weak fracture controlled copper iron sulphide mineralization, is a compelling target for exploration by grid drilling.

LOCAL: The western parts of the Pioneer claims are underlain by Eocene Princeton continental sediments

(cont'd)

and volcanics. South of the Pioneer claims, the contact between Princeton and Nicola rocks trends NE and is probably a normal fault. Within the Pioneer ground, the contact trends just west of north. There is no good evidence as to whether the contact is depositional or structural, but Princeton-Nicola contacts are faults more often than not.

The central and eastern parts of the Pioneer property are underlain by a belt of Upper Triassic Nicola volcanic rocks, about 600 m wide, flanked on the east by related? diorite. Further east, a part of the mid-Mesozoic Osprey Granodiorite intrudes the diorite.

The Nicola volcanics are host to what appears to be a long, narrow, belt of propylitic alteration, mineralized with fracture-controlled pyrite and weak chalcopyrite. Central to this 300-500 m wide, 7000+ m long zone, at the wide southern end, is an area about 200 m wide and more than 600 m long, in which argillic and/or phyllic alteration is pervasive. Copper values exceed 2000 ppm, and probably average more than 500 ppm, within this stronger alteration. 2000 m to the north, another area with similar grades, but less intense pervasive alteration, is shown as the Cop-Ex showing on Figure 1. 1200 m further north along the belt of altered Nicola rocks are exposures carrying up to 5% disseminated pyrite, with background copper values.

CONCLUSIONS AND RECOMMENDATIONS:

A long, narrow zone of altered Nicola volcanic rocks, mineralized with pyrite and local concentrations

(cont'd)

of chalcopyrite, appears to exist on the Pioneer claims. This belt is poorly exposed, and ample room exists for a medium-size porphyry copper deposit under glaciofluvial cover somehwere along the strike of the zone. The potential should be tested by 12 to 15 percussion drill holes, each 70 m long, in areas selected by geologic projection at sites chosen for ease of access.

BUDGET:

15 holes of 70 m for a total of 1070 m @ $17 m		$17,850
	Contingency	2,250
		$20,000

REFERENCES:

Assessment reports by Kennco, filed with B.C. Dept. of Mineral and Petroleum Resources.

Field maps of J. S. Christie

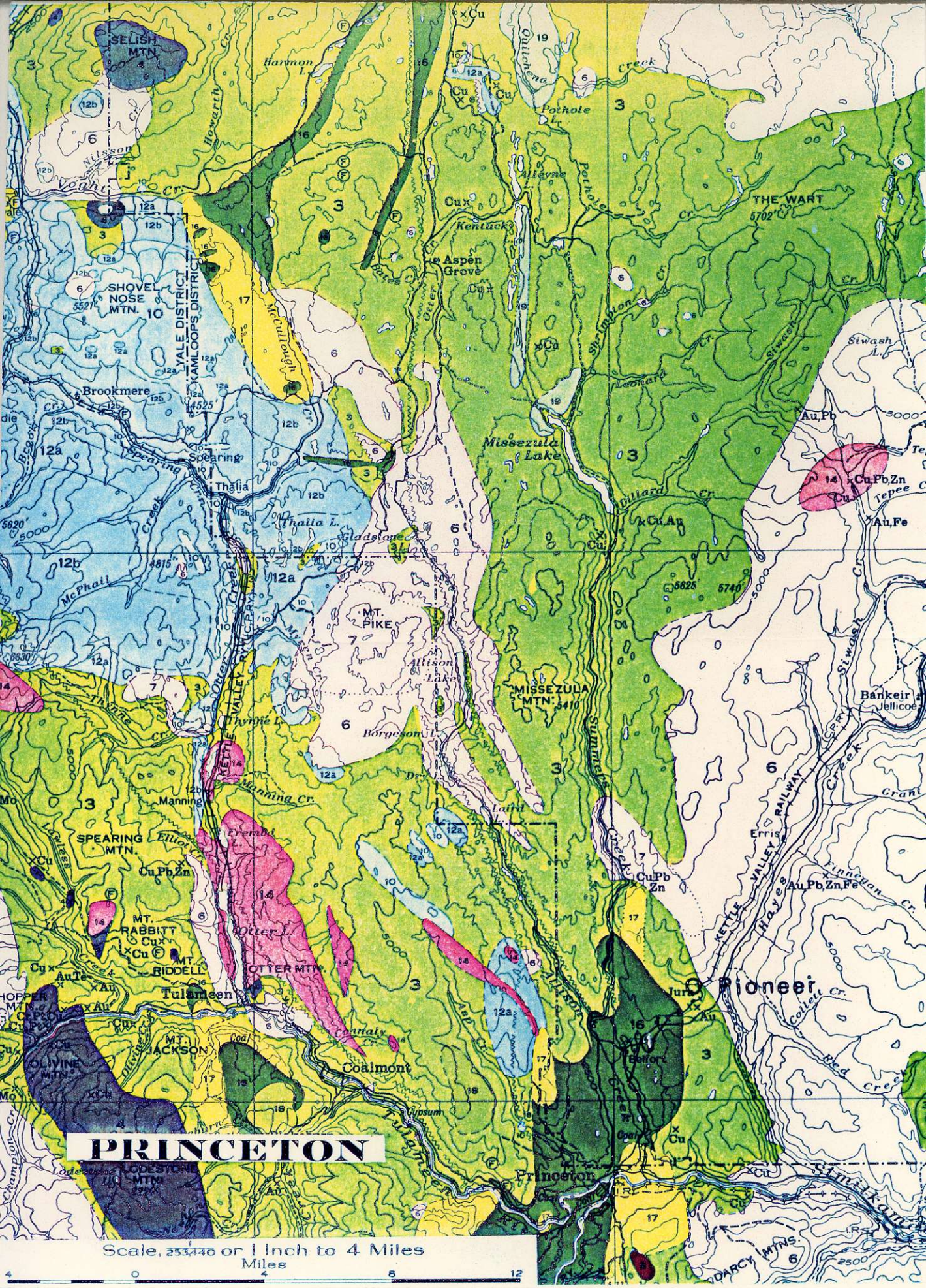

PRINCETON
Scale, 1:253,440 or 1 Inch to 4 Miles
Miles
4 0 4 8 12
SELISH MTN.
Harmon L.
Howarth Cr.
Nilsson Cr.
Voght Cr.
SHOVEL NOSE MTN.
YALE DISTRICT
KAMLOOPS DISTRICT
Brookmere
Spearing
Thalia
Thalia L.
Gladstone
McPhail Creek
Otter Valley Railway
MT. PIKE
Allison Lake
Thynne Cr.
Thynne L.
Manning Cr.
Manning
SPEARING MTN.
Elliott Cr.
Frembd L.
MT. RABBITT
MT. RIDDELL
OTTER MTN.
Otter L.
Tulameen
MT. JACKSON
Coalmont
Coal
Gypsum
Tulameen R.
Princeton
LODESTONE MTN.
Champion Cr.
Quilchena Creek
Pothole L.
Alleyne L.
Kentuck Cr.
Aspen Grove
Otter Cr.
Bates
Quilchena Cr.
Missezula Lake
Dillard Cr.
Shrimpton Cr.
Leonard
MISSEZULA MTN. 5410'
Borgeson L.
Summers Creek
Laird L.
Erris
Hayes
Kettle Valley Railway
Pioneer
Collett Cr.
Red Creek
Bankeir
Jellicoe
Siwash Cr.
Siwash L.
Tepee Cr.
Finnegan Cr.
Granite Creek
THE WART 5702'
Cu
Cu,Au
Au,Pb
Cu,Pb,Zn
Au,Fe
Cu,Pb Zn
Au,Pb,Zn,Fe
Cu x
Au Te
Au
Cu,Pb,Zn
Jura
Telford
DARCY MTNS.

FIG Pio-2

LEGEND

CENOZOIC

TERTIARY

MIOCENE OR LATER

19 — *Valley basalt: vesicular, varicoloured basalt*

18 — *Plateau basalt: amygdaloidal, brown basalt*

MIOCENE OR EARLIER

PRINCETON GROUP

16, 17

16. *Mainly shale, sandstone, and conglomerate; coal*
17. *Varicoloured andesite and basalt*

CRETACEOUS OR TERTIARY

UPPER CRETACEOUS OR LATER

14, 15

14. *OTTER INTRUSIONS: pink and grey granite and granodiorite*
15. *LIGHTNING CREEK INTRUSIONS: grey quartz diorite*

CRETACEOUS

LOWER CRETACEOUS

KINGSVALE GROUP

12a-b, 13

12a, *mainly volcanic breccia;* 12b, *mainly andesite and basalt porphyry*
13. *Andesite and basalt porphyry and volcanic breccia*

11

PASAYTEN GROUP

Mainly grit and shale; 11a, *mainly purple lava, tuff, and breccia*

SPENCE BRIDGE GROUP

10 — *Hard, reddish andesite and basalt*

MESOZOIC

JURASSIC (?) AND CRETACEOUS

UPPER JURASSIC (?) AND LOWER CRETACEOUS

DEWDNEY CREEK GROUP

9 — *Tuff, volcanic breccia, grit, argillite;* 9a, *mainly conglomerate*

JURASSIC OR LATER

8 — *COPPER MOUNTAIN INTRUSIONS: syenogabbro, augite diorite, pegmatite*

5, 6, 7

COAST INTRUSIONS: 5, *grey, slightly gneissic granodiorite;* 6, *mainly reddish, coarse-grained, siliceous granite and granodiorite;* 7, *light coloured granodiorite, quartz diorite, and gabbro*

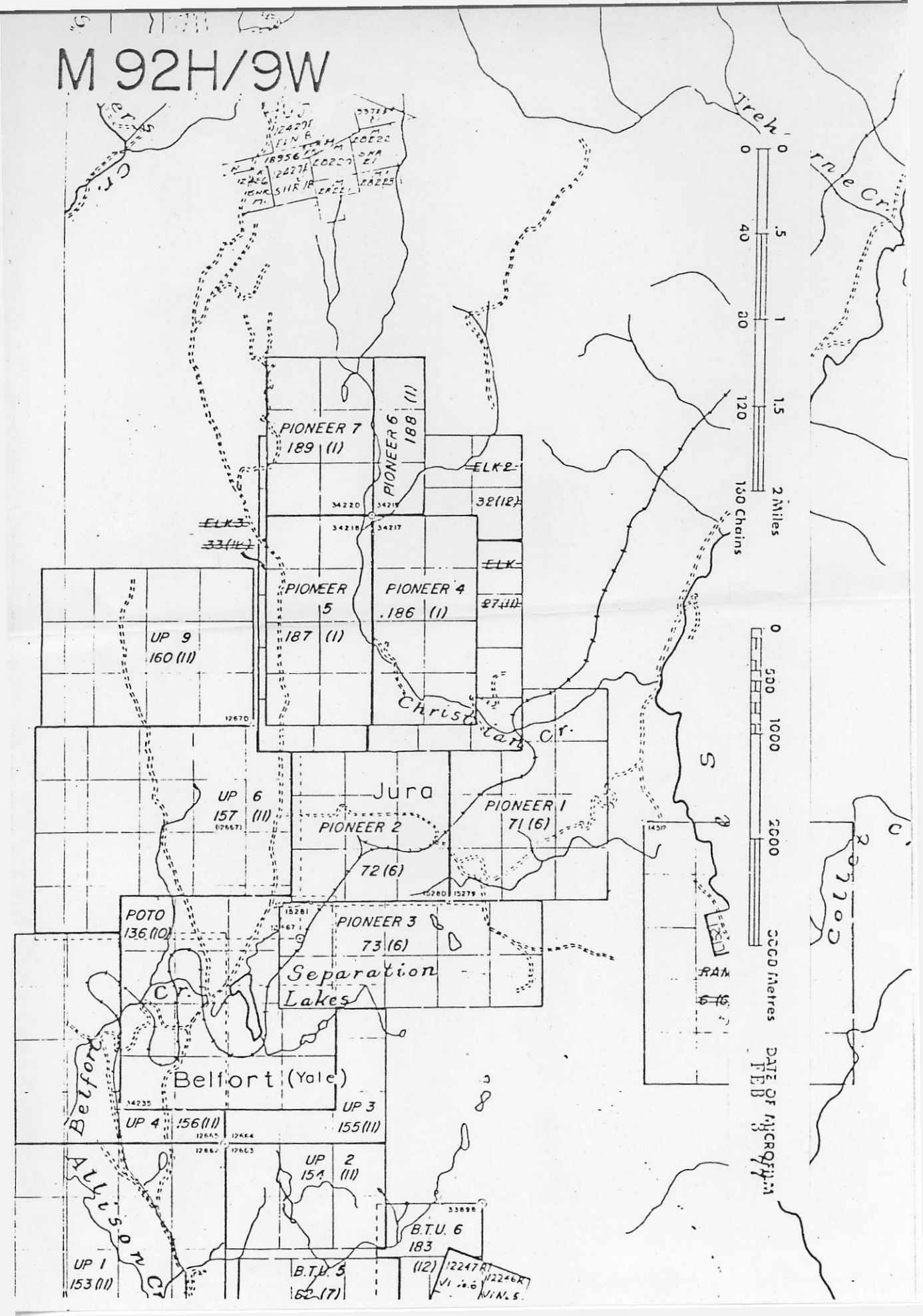
4 — *Peridotite, pyroxenite, gabbro*

TRIASSIC

UPPER TRIASSIC

NICOLA GROUP

3 — *Varicoloured lava; argillite, tuff, limestone; chlorite and sericite schist*


M 92H/9W
PIONEER 7
189 (1)
PIONEER 6
188 (1)
ELK 2
32 (12)
PIONEER
5
187 (1)
PIONEER 4
186 (1)
UP 9
160 (11)
Christian Cr.
UP 6
157 (11)
Jura
PIONEER 2
72 (6)
PIONEER 1
71 (6)
POTO
136 (10)
PIONEER 3
73 (6)
Separation
Lakes
Belfort (Yale)
UP 4
156 (11)
UP 3
155 (11)
UP 2
154 (11)
B.T.U. 6
183
(12)
B.T.U. 5
62 (7)
UP 1
153 (11)
Belfort Cr.
Allison Cr.
0 .5 1 1.5 2 Miles
0 40 80 120 160 Chains
0 500 1000 2000 3000 Metres
DATE OF MICROFILM
FEB 13 77

QUINTANA MINERALS CORPORATION

#4604

PIONEER CLAIMS

GEOLOGY AND ROCK GEOCHEMISTRY

SCALE

FEET 0 200 400 600 800 1000

METERS 0 50 100 150 200 250 300

Prepared by: M.R.W. Drawn by: Altair	Date: May 1977 Revised:	NTS MAP AREA 92 H 9/W.	DRAWING No.

PIONEER 1

PIONEER 8

Christian Creek

Alfalfa fault

New Road

Switchback Creek

Lake

Lake

and.

ser.,chl. 15% chlpy.

1.4-61-4-0.015 (46)

2.0-246-3-0.075 (44)

5.4-228-4-0.005 (45)

0.7-100-3-0.020 (39)

2.9-675-5-0.055 (43)

0.7-57-10-0.025 (47)

8.1-242-4-0.035 (40)

5.9-3400-9-0.365 (41)

10.2-1975-3-0.420 (42)

0.2-41-3-0.005 (38)

4.3-2850-2-0.170 (10)

30.0-205-13-0.035 (7)

48.0-295-10-0.080 (6)

25.0-4100-18-0.260 (29)

5.6-1810-7-0.045 (30)

8.0-245-7-0.050 (8)

0.7-440-7-0.030 (5)

0.9-330-2-0.005 (9)

3.7-445-10-0.015 (31)

I.P.

3.7-440-18-0.085 (27)

0.9-126-4-0.005 (36)

6.1-139-10-0.005 (33)

1.5-220-10-0.010 (32)

3.6-205-14-0.015 (28)

1.1-1890-7-0.035 (25)

0.8-74-19-0.010 (35)

4.3-130-10-0.020 (34)

2.8-865-13-0.030 (4)

6.7-78-7-0.020 (3)

0.5-3600-2-0.100 (26)

2.1-66-5-0.010 (11)

0.7-82-1-0.005 (1)

1.1-60-3-0.010 (2)

1.6-820-3-0.005 (23)

1.3-136-18-0.030 (24)

ox ?

2.4-1060-6-0.005 (22)

5.8-188-5-0.020 (12)

1.1-290-2-0.005 (15)

1.4-355-5-0.005 (13)

dia (14)

1.2-103-5-0.005

a) 24.0-95-2-0.010
b) 1.0-31-2-0.005 (18)

1.2-52-5-0.005 (19)

0.9-390-2-0.005 (20)

0.4-12-4-0.005 (16)

1.9-143-2-0.005 (21)

1.3-200-10-0.025 (17)

PIONEER 8

LEGEND

- 8 Granodiorite
- 7 Kspar - quartz porphyry
- 6 (Quartz) Monzonite porphyry
- 5 Felsite - probably occurs locally south of the Alfalfa Fault.
- 4 Pink feldspar porphyry
- 3 Monzodiorite
- 2 Microdiorite, probably related to 1. Probably includes dikes, sills and flows.
- 1 Nicola andesite
- ox 100% oxidized
- Outcrop
- Area of outcrops
- × Small outcrop
- $\times^{s}$ Sheared outcrop

GEOLOGICAL CONTACT

- Defined
- Approximate
- Assumed

- Inner limit of pervasive epidote
- Inner limit of chlorite
- 1% Total sulphide isoline

Hachures toward more intense alteration

(21) Geochemical sample number.

Control :- Brunton and Topofil

$\triangle^{12}$ Survey station

Claim boundary

1.1-290-2-0.005 Mo ppm - Cu ppm - As ppm - Au ppm

Aprox. loch.
Outcrops Princeton Volcs

COP-EX SHOWING AREA

LIMIT OF SULFIDE

3-5% dis. Py

ZONE OF PERVASIVE ALTERATION

Aprx. Loch 1960 Kennco D.D.H.-500'+ Princeton Seds. reported? No penetration of Nicola ?

Reported outcrop Princeton Group Seds.

Probable Fault 1960 AIR MAG. - KENNCO

No outcrop

Gate

CHRISTIAN CREEK

SUMMERS CREEK

SEPARATION LAKES

GLADYS L.

WAYNE L.

GOULD L.

ALLISON CREEK

2500

3000

3500

4000

LEGEND

- 5 Princeton Group – Volcanics
- 4 Princeton Group – Sediments
- 3 Pink to grey syenite to monzonite intrusives
- 2 Dark grey – Older ? – diorite intrusives
- 1 Nicola Group – Volcanics – volcaniclastics

Fault
Road
Outer limit of sulfides
Outer limit of pervasive argillic-phyllic alteration associated with sulfide mineralization
76 C 500 Sample number
98 Geochem result, Cu in ppm.

inches 0 1 2
centimetres 0 1 2 3 4 5

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

N

QUINTANA MINERALS CORPORATION

#4604

PIONEER

GEOLOGY GEOCHEMISTRY & CLAIMS

FEET 0 1000 2000 3000 4000 5000 FEET
METERS 0 300 600 900 1200 1500 METERS

Prepared by: J.S.C.
Drawn by: AT K, Altair

Date: Dec. 21, 1976
Revised: Feb., 1977

NTS MAP AREA

DRAWING No. P10-3