'77-#384-# 6563



# GEOLOGICAL REPORT, GLEN LAKE PROPERTY

22 kilometers west of Peachland

by

V.M. RAMALINGASWAMY

CLAIMS: SPIRIT GROUP (20 UNITS)

WORK PERFORMED: JUNE - JULY, 1976

## INTRODUCTION

The Glen Lake property consists of Spirit Claim Group of 20 units, staked in the month of July, 1976 over lapsed claims held by several junior mining companies including Juniper Mines Ltd. during the late and middle sixties (Figure 1)

### Location and Accessibility

The Spirit Claim Group follow the valley and adjoining slopes of a small creek, locally referred to as Camp Creek, draining into Glen Lake. Coordinates of the center of the property are approximately 49° 44.5' N and 120° 00.5' W. Access is by gravel road either from Peachland or Princeton, about 22 kms. from the former or 61 kms. from the latter. The road traverses the entire property.

Princeton lies 290 kms. and Peachland 440 kms. by road from Vancouver, B.C.; both these towns are easily accessible by car on paved roads.

## EXPLORATORY WORK (GEOLOGICAL)

The northern two-thirds portion of the claim, is thickly wooded and is almost entirely devoid of outcrops. In the southern portion of the property the outcrops have been opened up by companies who held the claims during the early sixties. Figure 2 shows the general geology of the area in which the claims are located. Figure 3 shows the local geology.

The geological work was carried out by the writer and Dr. Antonio M. DeQuadros. Dr. DeQuadros obtained his M.S. degree from the University of California in Los Angeles and his Ph.D. degree from the

University of Nairobi, Kenya. He has been working as a geologist in British Columbia and Yukon since 1973. The writer's qulifications and experience is given on a certificate included in this report.

## GENERAL GEOLOGY

The rocks predominantly exposed in this area a the Nelson and Valhalla plutonic rocks of Cretaceous age and intrude the Nicola Group volcanics and sediments of Upper Triassic age. The property lies in the Nelson plutonic rocks. These rocks consist of mainly granodiorite, quartz diorite, diorite, granite, quartz monzonite, syenite and monzonite. Incidently most of the porphyry copper and molybdenum deposits of British Columbia occur in the Nelson batholithic rocks. The Brenda porphyry copper deposit lies about 16 kms. north the Glen Lake property. The general geology is given on Figure 2.

## LOCAL GEOLOGY

Overburden is extensive throughout the property and the geological mapping is confined to the southern portion of the property. The main rock type in the area consists of edium to coarse grained light colored granodiorite. The rock is generally fresh, though in places specially along fractures is somewhat altered (Figure 3)

Within this granodiorite an altered porphyritic quartz monzonite is emplaced along faults. The faults trend N 55° W. The faults can be observed in rock exposures along Camp Creek. Some 600 meters to the northwest the altered quartz monzonite grades into the granodiorite. The porphyry mainly consists mixture of quartz, sericite and variable amounts of pyrite. Where not completely altered k-feldspars can be

seen. The felspars are altering to kaolin. Much of the highly altered material is vuggy and highly fractured. Quartz occurs as a primary constituent in the groundmass, as well as quartz eyes, stringers and veins, and as open-space fillings.

Alteration and Mineralization

Three stages of alteration have been identified.

First Stage: Formation of intense quartz-sericite-pyrite alteration of the porphyritic quartz monzonite. Where the rock is not completely altered, feldspars can still be observed. Fine grains of molybdenite can be seen in the sericitic groundmass. This alteration zone may be part of other alteration patterns; argillic, propylitic and potassic alteration zones. Very little of the argillic and potassic zones was observed in the claim area.

Second Stage: Formation of quartz-pyrite veinlets. These veinlets cut across the first stage described above. The veinlets consist of vuggy quartz with open space filling and pyrite. Crystals of ferrimolybdite and some molybdenite occur in the vugs.

Third Stage: Late stage fractures cut across the first stage of alteration. These fractures are coated with ferrimolybdite, suggesting that these fractures, before oxidation were coated with molybdenite. Where not oxidized these fractures may contain the majority of the molybdenum mineralization.

It is well known that stockwork molybdenum and porphyry molybdenum deposits, silicification and K-feldspar alteration is associated with the mineralization. The primary K-feldspar alteration zone has not been observed in the area. It is possible that this alteration zone has not been exposed and occurs deeper down below.

The granodiorite bordering the porphyritic quartz monzonite is

altered along fractures. Sericite and some pyrite occur in thin envelopes along fractures. No molybdenum mineralization was observed.

It is also possible that the altered quartz monzonite porphyry exposed, is faulted block of an unexposed quartz monzonite phase of an multiple phase intrusion.

## CONCLUSIONS AND RECOMMENDATIONS

Molybdenum mineralization is exposed in an intensely altered porphyritic quartz monzonite along Camp Creek and 600 meters to the northwest along Chapman Creek. The mineralization is extremely fine grained and is difficult to recognize. As noted earlier, ferrimolybdite occurs in the main host rock, suggesting that extensive oxidation has taken place. Furthermore the rock is extemely porous and vuggy.

Porphyritic quartz monzonite is a favorable host rock for molybdenum mineralization. The alteration zone most commonly associated is K-feldspar alteration and silicification. These alteration zones are not exposed in the area, but is the next zone (hypogene) to quartz-sericite-pyrite zone. Because of the intensity of quartz-sericite-pyrite zone (not observed in other parts of the Brenda area) it is probable that a potassic zone occurs in the host rock.

The altered zones can be traced with magnetometer and Induced Polarization methods. Overburden is extensive and the possibility of extending known mineralized zones and finding mineralized zones associated with potassic alteration zone is considered good.

Systematic geochemical survey for Molybdenum and Copper. If the results are favorable diamond drilling is recommended.

CERTIFICATE

I, V.M. Ramalingaswamy, hereby declare that:

1. I hold the degree of M.S. in Economic Geology from the University of Washington, Seattle, Washington, 1975.

2. I have been employed in Mineral Exploration and worked as a geologist in British Columbia since 1970.

3. I personally did the geological mapping along with Dr. A.M. DeQuadros on the Glen Lake property.

Signed:

V.M. Ramalingaswamy Oct 26, 1977

V.M. Ramalingaswamy

1120 Heywood Street
North Vancouver, B.C.
V7L 1H4

Certificate of Expenditures on the SPIRIT CLAIM (20 units) during June and July, 1976.

| | | |
|---|---|---|
| 1. | 2 geologists- 20 June-25 June; 25 July-30 July, 1976 | |
| | A.M. De Quadros @ $ 75.00 a day, 10 days..... | 750.00 |
| | V.M. Ramalingaswamy @ $ 75.00 a day, 10 days.... | 750.00 |
| 2. | 1 prospector- 20 June-25 June; 25 July-30 July, 1976 | |
| | I.G. Sutherland @ $50 a day, 10 days..... | 500.00 |
| | (casual help) | |
| 3. | 4 wheel drive @ $25.00 a day, 10 days..... | 250.00 |
| 4. | Travel to & from Vancouver, $40.00 return trip, 2 trips..... | 80.00 |
| 5. | Food and lodging, $100.00 per week..... | 145.00 |
| 6. | Field Supplies..... | 55.00 |
| 7. | Preparing of report..... | 10.00 |
| TOTO | | |
| TOTAL EXPENDITURE..... | | 2530.00 |

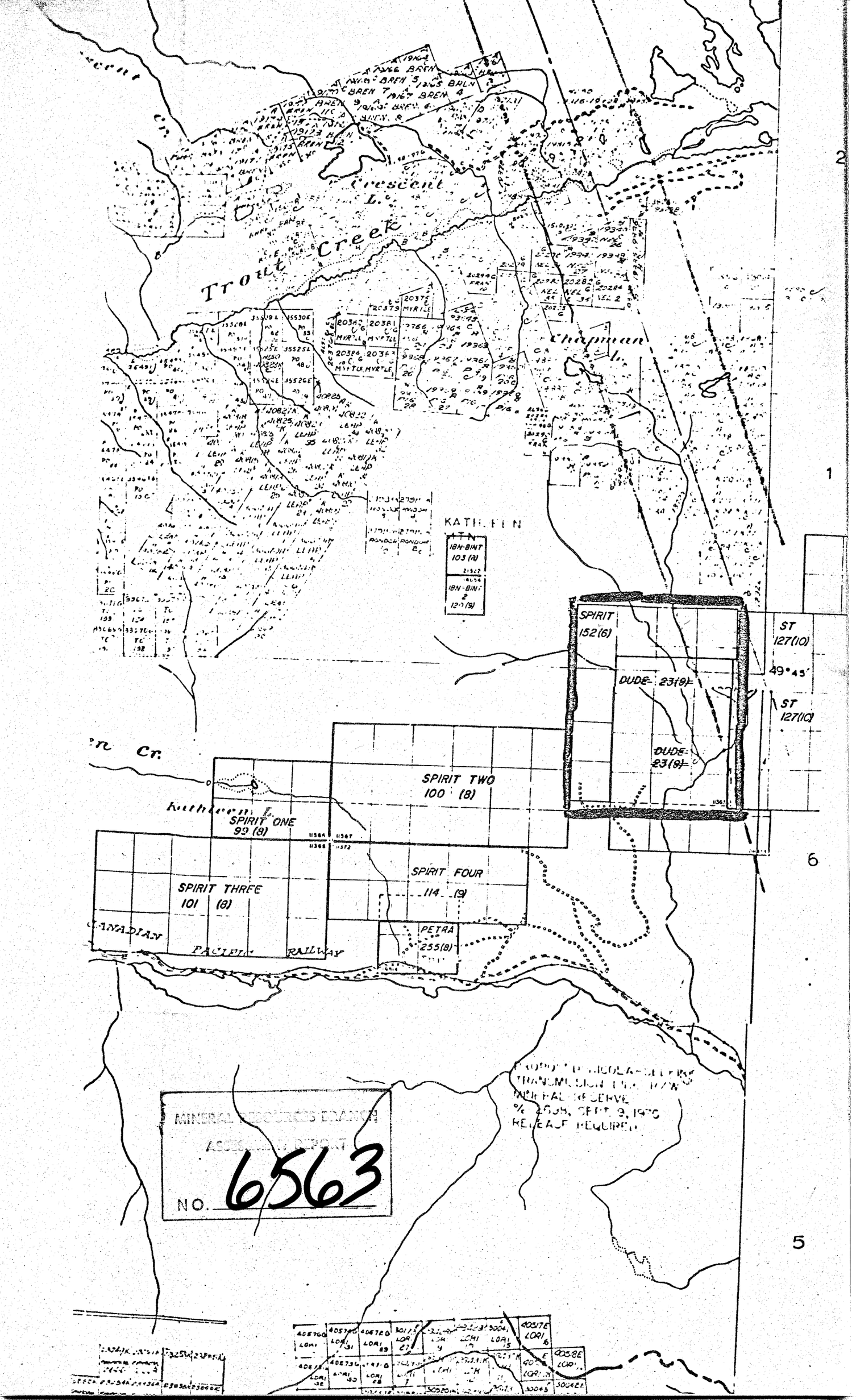

Trout Creek
Crescent L.
Chapman L.
KATHLEEN
IBN-BINT 103 (8)
IBN-BINT 2 120 (9)
SPIRIT 152(6)
DUDE 23(9)
ST 127(10)
49°45'
SPIRIT TWO 100 (8)
SPIRIT ONE 99 (8)
SPIRIT THREE 101 (8)
SPIRIT FOUR 114 (9)
PETRA 255(8)
CANADIAN PACIFIC RAILWAY
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 6563

FIGURE - 2

GEOLOGICAL SURVEY OF CANADA
DEPARTMENT OF MINES AND TECHNICAL SURVEYS

PRELIMINARY SERIES

LEGEND

CENOZOIC

MESOZOIC

PALAEOZOIC AND OLDER OR LATER

TERTIARY (?)

21 — Basalt; minor olivine basalt

JURASSIC (?) OR TERTIARY (?)

20 — PORPHYRITIC ROCKS: syenite, granite; minor monzonite and shonkinite

EOCENE OR OLIGOCENE

19 — Andesite, trachyte, minor basalt, locally, interbedded tuff and scoria; 19a, andesite and trachyte flows and agglomerate; 19b, conglomerate, sandstone, shale, tuff; minor agglomerate and breccia; 19c, andesite and trachyte; 19d, agglomerate and conglomerate

PALEOCENE OR EOCENE

18 — Porphyritic granite and rhyolite

17 — Conglomerate, sandstone, shale, tuff

CRETACEOUS (?)

16 — VALHALLA PLUTONIC ROCKS: granite, granodiorite

15 — NELSON PLUTONIC ROCKS: granodiorite, quartz diorite, diorite; granite, quartz monzonite, syenite, monzonite

JURASSIC (?)

14 — 14a, pyroxenite; 14b, hornblendite; 14c, serpentinite

TRIASSIC OR JURASSIC

13 — Limestone

TRIASSIC

UPPER TRIASSIC

NICOLA GROUP

12 — Greenstone, tuff, quartzite, limestone, argillite, and schist

TRIASSIC OR EARLIER

8–11 — 8. BARSLOW FORMATION: argillite
9. INDEPENDENCE FORMATION: chert, greenstone
10. SHOEMAKER FORMATION: chert, some tuff and greenstone
11. OLD TOM FORMATION: greenstone, minor diorite

PERMIAN AND/OR TRIASSIC

ANARCHIST GROUP

7 — Greenstone, quartzite, greywacke, limestone; locally paragneiss

PERMIAN AND (?) PENNSYLVANIAN

5,6 — 5. CACHE CREEK GROUP: greenstone, quartzite, argillite, limestone
6. BLIND CREEK FORMATION: limestone; limy argillite

CARBONIFEROUS (?)

KOBAU GROUP

4 — Quartzite, schist, greenstone

PRE-PERMIAN

3 — OLD DAVE INTRUSIONS: serpentinized ultrabasic rocks

CHAPPERON GROUP

2 — Chlorite schist, quartzite

Adjoins Map 1059A, "Vernon"

Adjoins Map 884A, "Princeton"

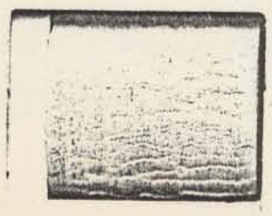
120°00'

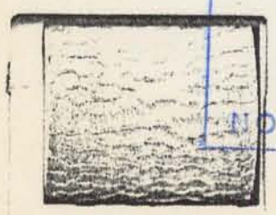
50°00'

45'

30'

SPIRIT CLAIM





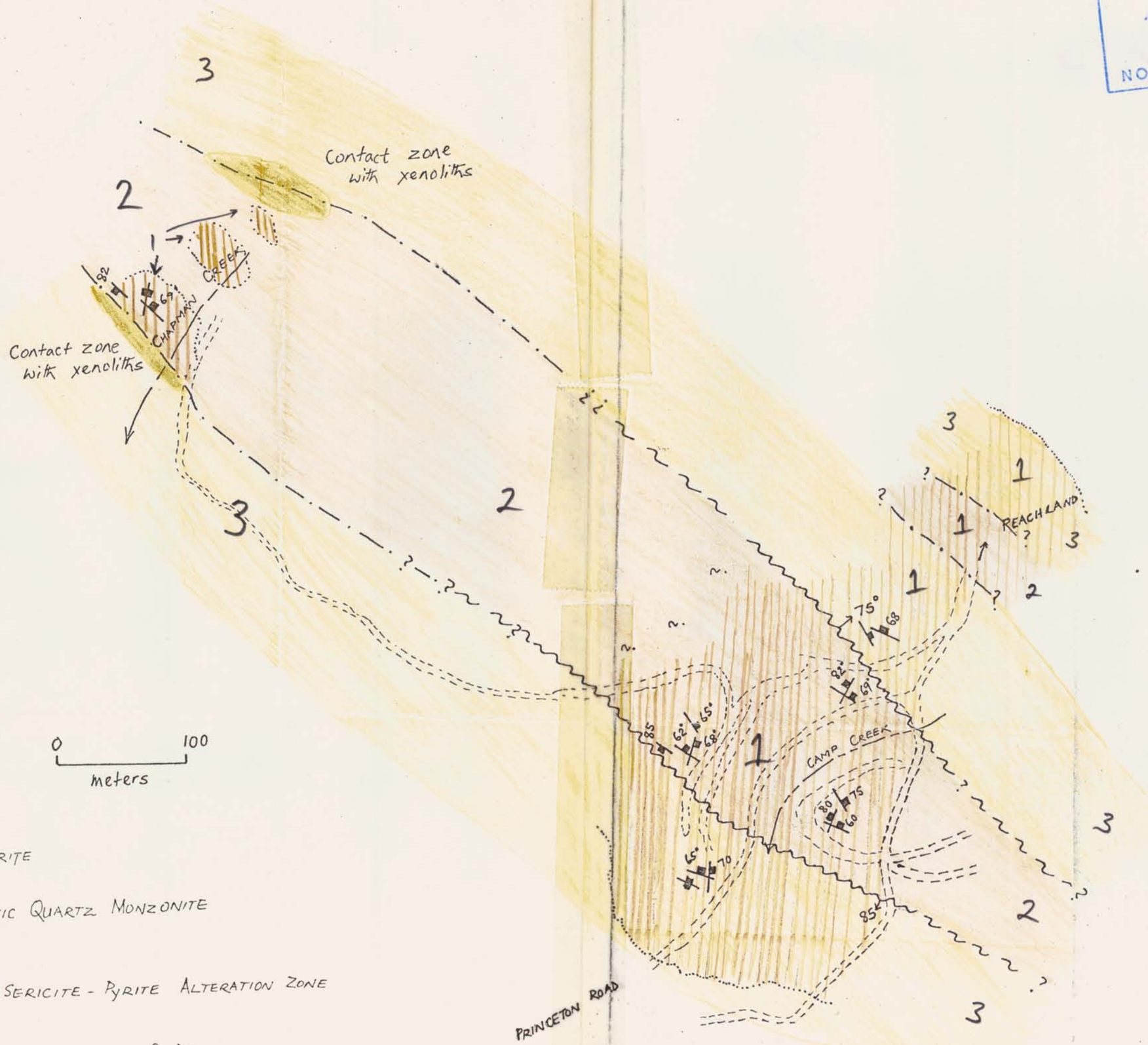



FIGURE 3

LEGEND

0 100 meters

Road

3 GRANODIORITE

2 PORPHYRITIC QUARTZ MONZONITE

1 & QUARTZ - SERICITE - PYRITE ALTERATION ZONE

JOINTS WITH STRIKE & DIP

GEOLOGICAL CONTACT

FAULT

DETAILED GEOLOGY OF THE SPIRIT CLAIM - SOUTHERN PORTION - GLEN LAKE AREA