

PROPOSED DIAMOND DRILL PROGRAM

ROY AREA

Britannia Option, British Columbia

NTS 92G/10

826124

H. L. Gibson

September 13, 1985

Table of Contents

	Page
INTRODUCTION	1
Location and Access	1
Purpose	1
REGIONAL GEOLOGY	1
GEOLOGY OF THE ROY AREA	3
TARGET AREA	5
PROPOSED DRILL HOLES	6
CONCLUSIONS	6
Table 1: Proposed Diamond Drill Holes, Roy Area	7
Figure 1: Property Location	2
Figure 2: 1:2000 Geological Map	in pocket
Figure 3: 1:2000 Na ₂ Lithogeochem Map	in pocket
Figure 4: 1:2000 Ba Lithogeochem Map	in pocket
Figure 5: Section A-A (P9)	in pocket
Figure 6: Section B-B (P4, 5, 6)	in pocket
Figure 7: Stratigraphic Section and Targets	4
Figure 8: Section C-C	9
Figure 9: Section D-D (P8)	in pocket
Figure 10: Section P1	10
Figure 11: Section P2, P3	11
Figure 12: Section P6	12

INTRODUCTION

Location and Access

The Roy Area is located within the Indian River portion of CFC's Britannia property (Figure 1). The Britannia property, optioned from Anaconda in June, 1984, consists of 321 claims which cover a surface area of approximately 6,700 hectares.

The Roy Area is accessible by helicopter or via a 17km 4WD road from Squamish (Figure 1). The road from the head of Indian Arm to the claim group is in excellent repair and in conjunction with water taxi service provides ready access to the area from North Vancouver.

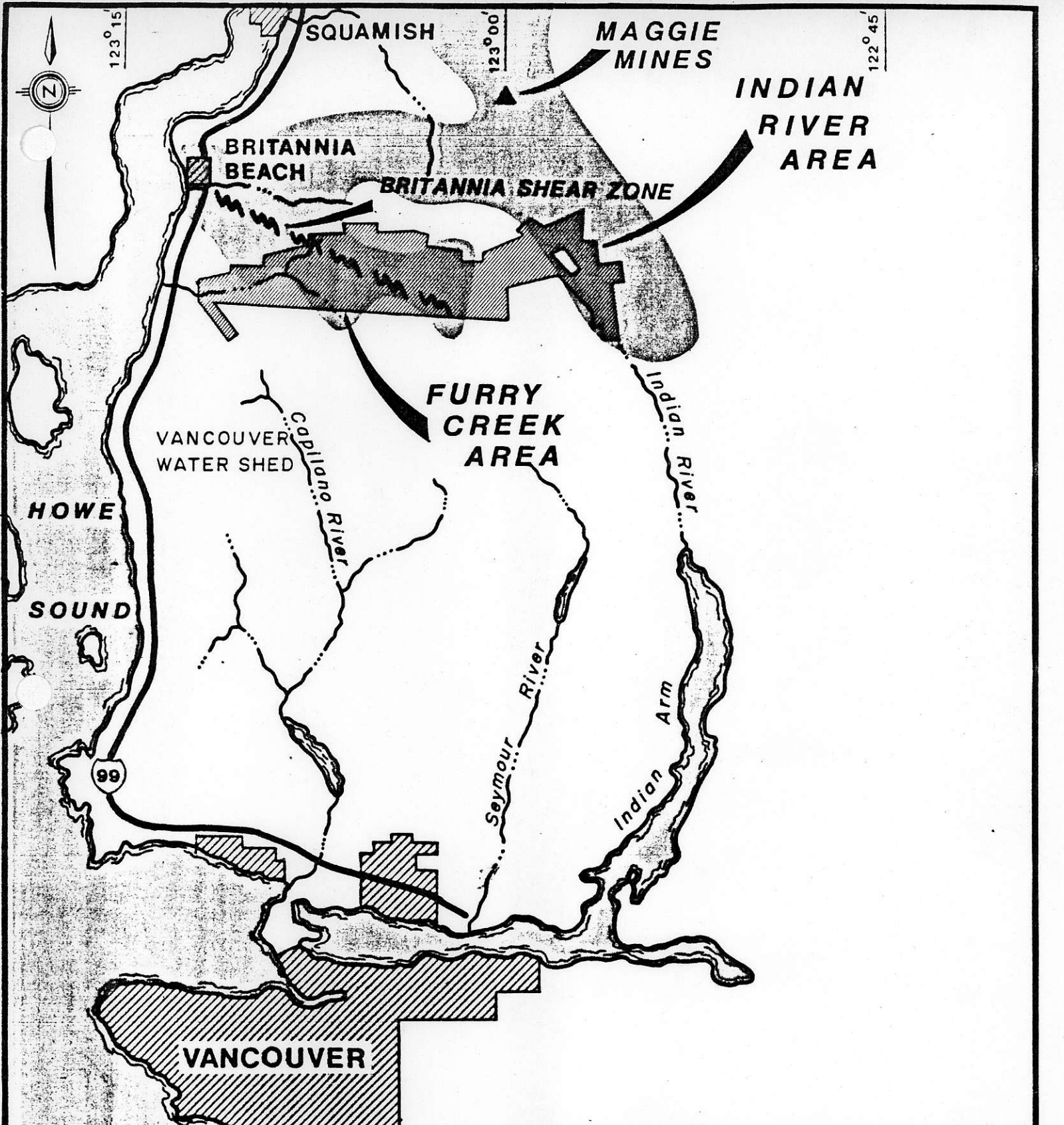
Purpose

Volcanic stratigraphy of the Indian River area is unexplored and offers excellent exploration potential. The target is a shallow (<400m) volcanogenic massive sulphide deposit in a proximal volcanic environment similar to CFC's Noranda deposits. Massive sulphide lenses contained within the former Britannia mine, located 12km to the west, contributed 2.1M tons grading 1.5% Cu, 4.4% Zn, 0.3 oz/t Ag and 0.28 oz/t Au to the 55 M ton deposit.

In the Roy area 3 stacked rhyolite lava-domes are mineralized and altered over a stratigraphic interval exceeding 500m and warrant an aggressive drill program. This proposal outlines a drill program totalling 2440m in 8 holes. Drill holes are located to test specific geological/geochemical targets and to maximize geophysical (PEM) coverage along 5 favourable rhyolite flow/dacite breccia contacts. A detailed account of the geology and previous work will be provided in a later report.

REGIONAL GEOLOGY

The Indian River area is underlain by Lower Cretaceous metavolcanic/sedimentary rocks of the Britannia Pendant, which is one of many NW-trending volcano-sedimentary belts within the Coast Plutonic Complex (CPC). The CPC is comprised of pre, syn and post tectonic plutons of granitic to gabbro composition.



BRITANNIA PROJECT

BRITISH COLUMBIA

FIGURE 1

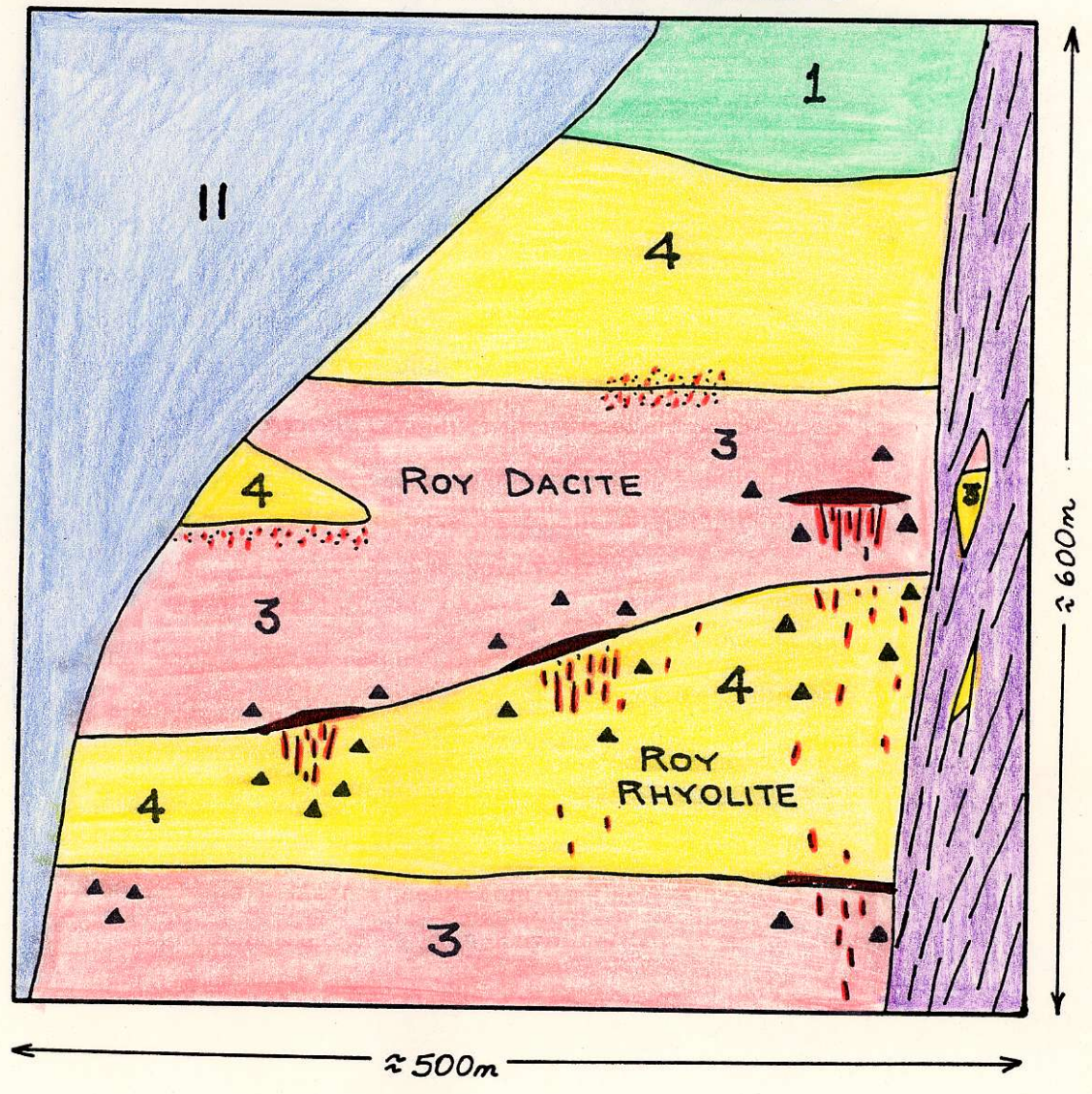
CORPORATION FALCONBRIDGE COPPER

GEOLOGY OF THE ROY AREA

The Roy Area is underlain by a complex succession of proximal rhyolitic lava-domes, dacitic/andesitic pyroclastic rocks, minor chert and argillaceous metasediments which strike 115° and dip $30-60^{\circ}$ N (Figure 2). Structural cross-sections AA and BB (Figures 3 and 4) indicate that stratigraphy south of the London Porphyry (composite gabbro-quartz microporphyry intrusion with porphyry Cu-Mo mineralization) is north facing and shallow north-dipping ($<50^{\circ}$) whereas north of the London Porphyry stratigraphy is folded about a west-plunging, NW-striking synclinal fold axis. The stratigraphic succession south of the London Porphyry and north of the Killer Dyke complex (swarm of $>90\%$, predominately andesite dykes) is shown in Figure 7, and from oldest to youngest is as follows:

1. Lower Dacitic Unit - consists primarily of incipiently welded subaqueous ash flow tuffs and localized dacitic lava domes. Chalcopyrite stringer mineralization occurs adjacent to the Killer Dyke complex and directly below Roy Rhyolite (3.5% Cu, 4.0% Cu in grab samples).
2. Roy Rhyolite - proximal, flow-banded, rhyolite lava-dome with main vent located near Killer Dyke complex, unit thins to the northwest. Significant chalcopyrite stringer mineralization and chlorite alteration from the Killer Dyke complex westwards for approx. 500m (best assays include 23% Cu, 0.048 oz/t Au/0.3m, 27% Cu/0.3m and 19% Cu, 0.051 oz/t Au/0.61m).
3. Roy Dacite - sequence of crystal-rich and crystal-poor tuffs and siliceous ash, chert units. Host to chalcopyrite stringer mineralization at the Roy Prospect (21% Cu, 0.17% Zn/1m).
4. Upper Rhyolite : composite, proximal flow-banded rhyolite lava-dome, main vent located directly above Roy Prospect. No significant mineralization at surface but base of unit contains disseminated pyrite-chalcopyrite mineralization in hole 19-2.

FIGURE 7
STRATIGRAPHY and TARGETS



TARGET AREA

Volcanic stratigraphy between the London Porphyry intrusion and Killer Dyke complex presents a neatly defined, target delineated by:

1. Favourable geology and mineralization.

Stratigraphy in the Roy Area represents a cross-section through a proximal rhyolitic vent area containing 3 stacked rhyolite lava-domes separated by dacitic pyroclastic rock. Five rhyolite flow/dacite breccia contacts along with intra-rhyolite flow contacts (Upper Rhyolite) and chert-felsic ash interbeds in dacitic pyroclastic units (Roy Dacite) offer potential targets horizons.

Chalcopyrite stringer mineralization with attendant chlorite alteration occurs throughout the stratigraphic package (approx. 500m) along strike and parallel to the adjacent Killer Dyke complex and along the top of the Roy Rhyolite.

2. Alteration

The area of mapped chlorite alteration (Figure 2) is encompassed within a larger area of Na_2O depletion (Figure 3). Areas of Na_2O depletion, as expected, are associated with chalcopyrite stringer mineralization and define:

- a) a large semi-conformable alteration zone that encompasses the Roy Rhyolite/Roy Dacite contact in the target area
- b) a discordant alteration zone that extends East-West, along the Killer Dyke complex, across the target area.

Barium anomalies (Figure 4) are scattered but show a distinct concentration within the target area where they are aligned east-west along a zone which includes the Roy Prospect.

PROPOSED DRILL HOLES

A total of 8 drill holes (2440m) are proposed to test the Roy Area in 1985. Of the holes proposed, 6 are high priority holes (P1 - P6, 2140m) and must be drilled to evaluate the near-surface (<400m) potential of the Roy Area; the remaining 3 holes (P7-P9, 300m) are deepening of previous holes (81-8, 80-3, 80-1) and are contingent upon the results of P1 - P6.

The proposed holes are located on geological/geochem plan maps in Figures 2 and 4, and on structural cross-section of Figures 5, 6, 9, 10, 11 and 12. The depth, azimuth, dip, cost and targets for each proposed hole are contained in Table 1.

CONCLUSIONS

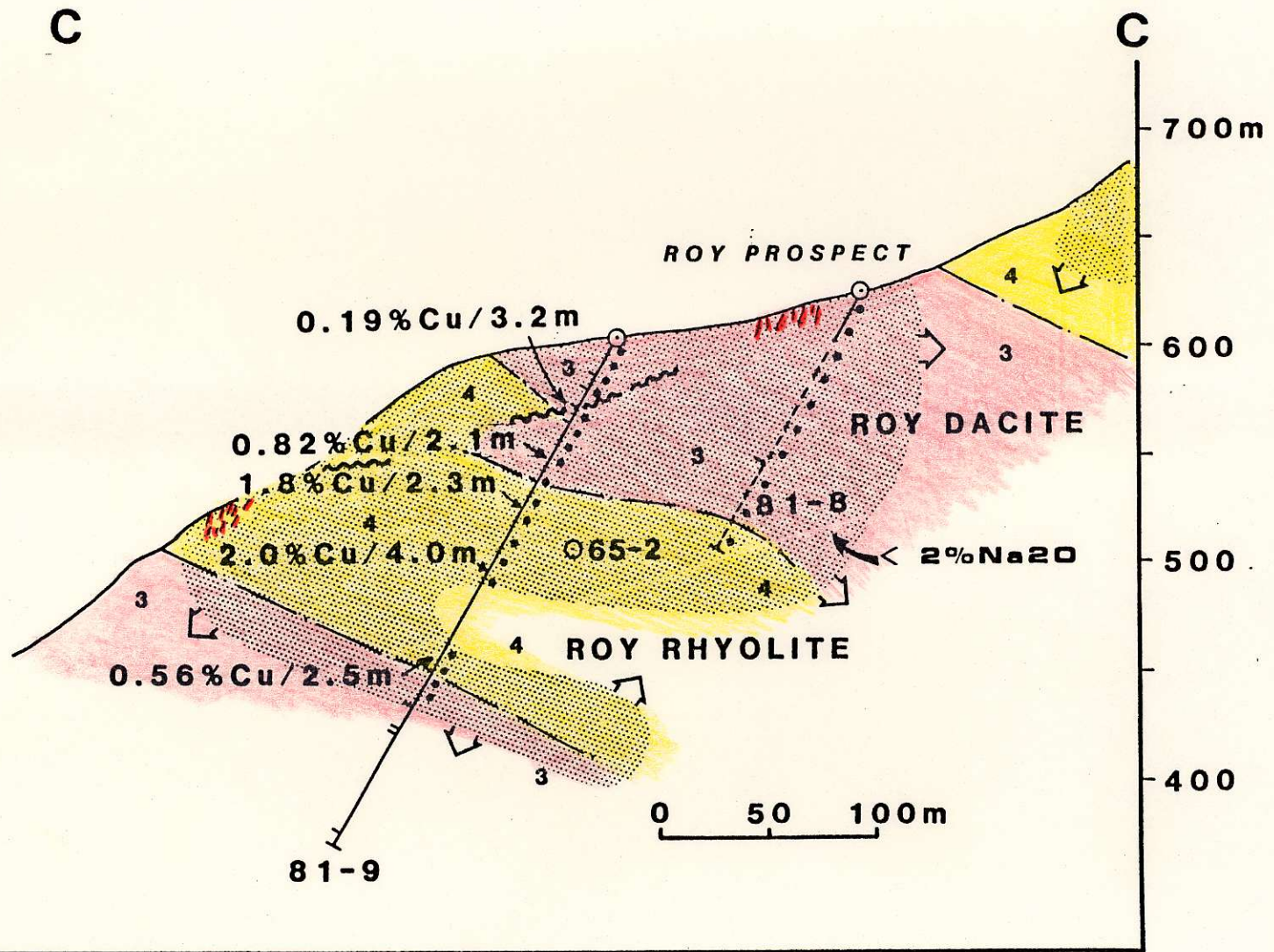
Volcanic stratigraphy of the Roy area is relatively unexplored and offers excellent potential for hosting a shallow (<400m) volcanogenic massive sulphide deposit. The presence of 5 poorly tested horizons within a proximal rhyolitic vent area, zones of discordant alteration and mineralization at surface and in previous drill holes warrant an intensive drill program. A total of 2440m in 8 holes is proposed of which 2140m (6 holes) is high priority and must be completed to assess the near-surface potential of the Roy Area in 1985.

Table 1 PROPOSED DIAMOND DRILL HOLES, ROY AREA, BRITANNIA PROPERTY

<u>Hole No.</u>	<u>Depth</u>	<u>Dip</u>	<u>Azimuth</u>	<u>Cost</u>	<u>Comments</u>
P1	300m	73 ⁰	212 ⁰	\$24,600	Hole P1 (Figures 2&10) is located to test the Roy Dacite unit and contacts with an overlying rhyolite flow and underlying Roy Rhyolite below an area of strong surface Na ₂ O depletion and chalcopyrite stringer mineralization (chip samples assayed 5.4% Cu, 1.12 oz/T Ag over 1.3m with "fringe" grab samples containing up to 1.7% Zn)
P2	300m	57 ⁰	217	\$24,600	P2 and P3 (Figures 2 & 11) will test the complete stratigraphic package (base of Upper Rhyolite - basal dacitic breccias) below a large surface Na ₂ O depletion zone (local Ba anomalies). Hole 81-9 (Figure 8) is Na ₂ O depleted along its length and intersected significant chalcopyrite stringer mineralization (2% Cu/4.0m) in Roy Rhyolite within this target area.
P3	400m	90 ⁰	-	\$32,800	
P4	340m	75 ⁰	237 ⁰	\$27,800	Holes P4 and P5 (Figures 2&6) will test the base of the Upper Rhyolite flow (disseminated mineralization in 19-2), the Roy Dacite package below the Roy Prospect (21% Cu/1m) contact with underlying Roy Rhyolite (stringers - 23% Cu/0.04 oz/T Au over 0.3m) and basal dacitic breccias (3.5% Cu - grab sample). The target area underlies a large discordant Na ₂ O depletion anomaly and scattered Ba anomalies.
P5	400m	75 ⁰	57 ⁰	\$32,800	
Total	1740m			\$142,600	

(100% available from 1985 B. C. Budget)

<u>Hole No.</u>	<u>Depth</u>	<u>Dip</u>	<u>Azimuth</u>	<u>Cost</u>	<u>Comments</u>
P6	400m	69 ⁰	234 ⁰	\$32,800	P6 (Figure 6) is located to test the top and basal contacts of the Upper Rhyolite flow, internal flow contacts, and underlying Roy Dacite (Roy Rhyolite possibly) below a Na ₂ O depletion anomaly. P6 is located along and sub-parallel to the Killer Dyke complex which defines a fundamental structure that parallels the trend of discordant mineralization and alteration in adjacent volcanic rocks.
P7 (81-8)	100m	60 ⁰	235 ⁰	\$8,200	Hole 81-8 (Figures 6) is Na ₂ O depleted along its length and is located below chalcopyrite stringer mineralization at the Roy Prospect and a large Na ₂ O depletion (Local Ba anomalies) anomaly. Hole 81-8 will be deepened to test the basal contact of the Roy Rhyolite below this mineralized and altered area. Hole P7 is contingent upon results of holes P4 and P5.
P8 (80-3)	100m	50 ⁰	155 ⁰	\$8,200	Hole 80-3 (collared in London Porphyry) intersected significant mineralization (0.13% Zn/4m and 0.32% Cu/5.5m) in Na ₂ O-depleted Roy Dacite above the Roy Rhyolite contact. Hole 80-2 (Figure 4) will be deepened to test the top and basal contact of the Roy Rhyolite and is contingent upon results obtained in P2 and P3.
P9 (80-1)	100m	60 ⁰	235 ⁰	\$8,200	Deepen 80-1 (Figure 5) to test the top and bottom contacts of the Roy Rhyolite below a surface Na ₂ O-depletion and Ba anomaly, adjacent to the London Porphyry.
Total	<u>2440m</u>			<u>\$200,000</u>	



SECTION C-C, LOOKING WEST

FIGURE 8

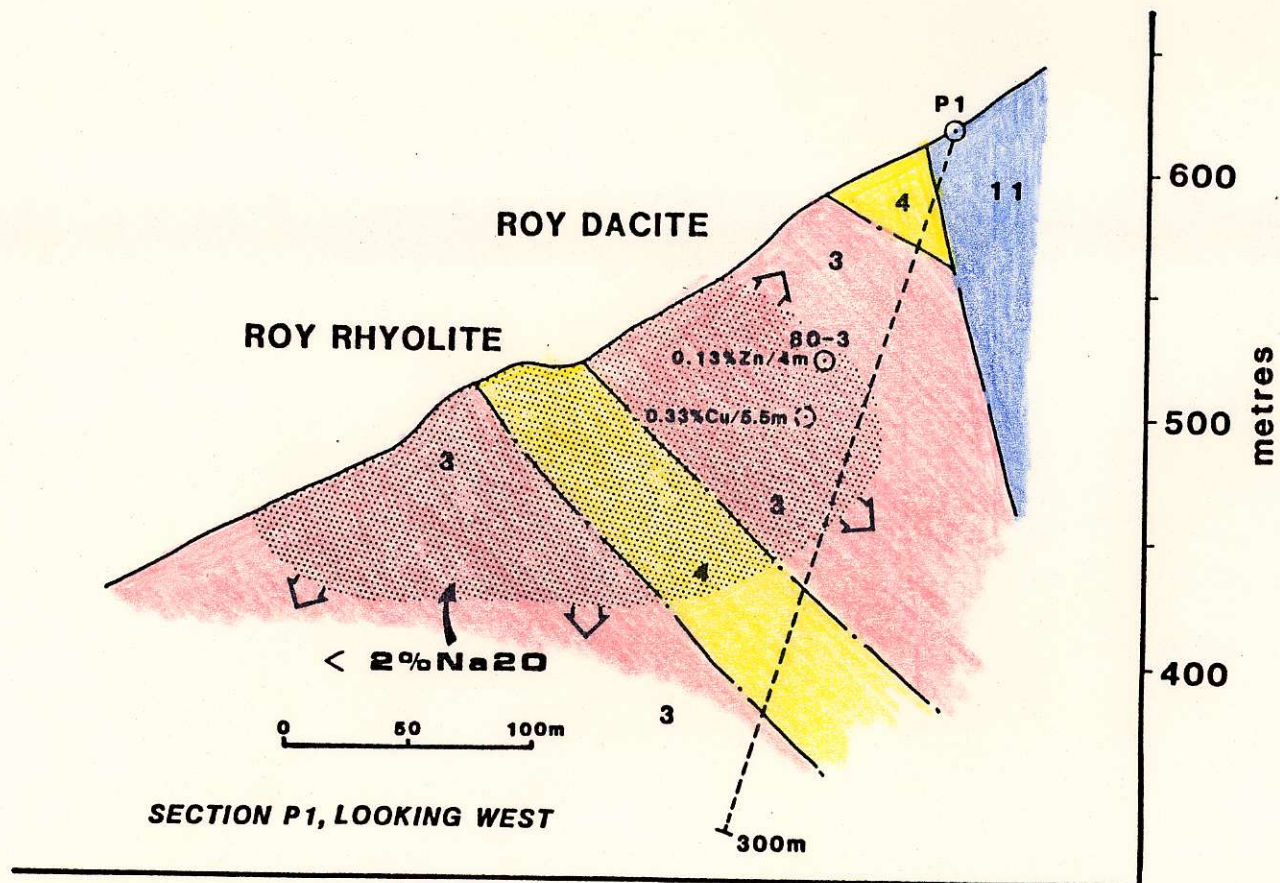


FIGURE 10

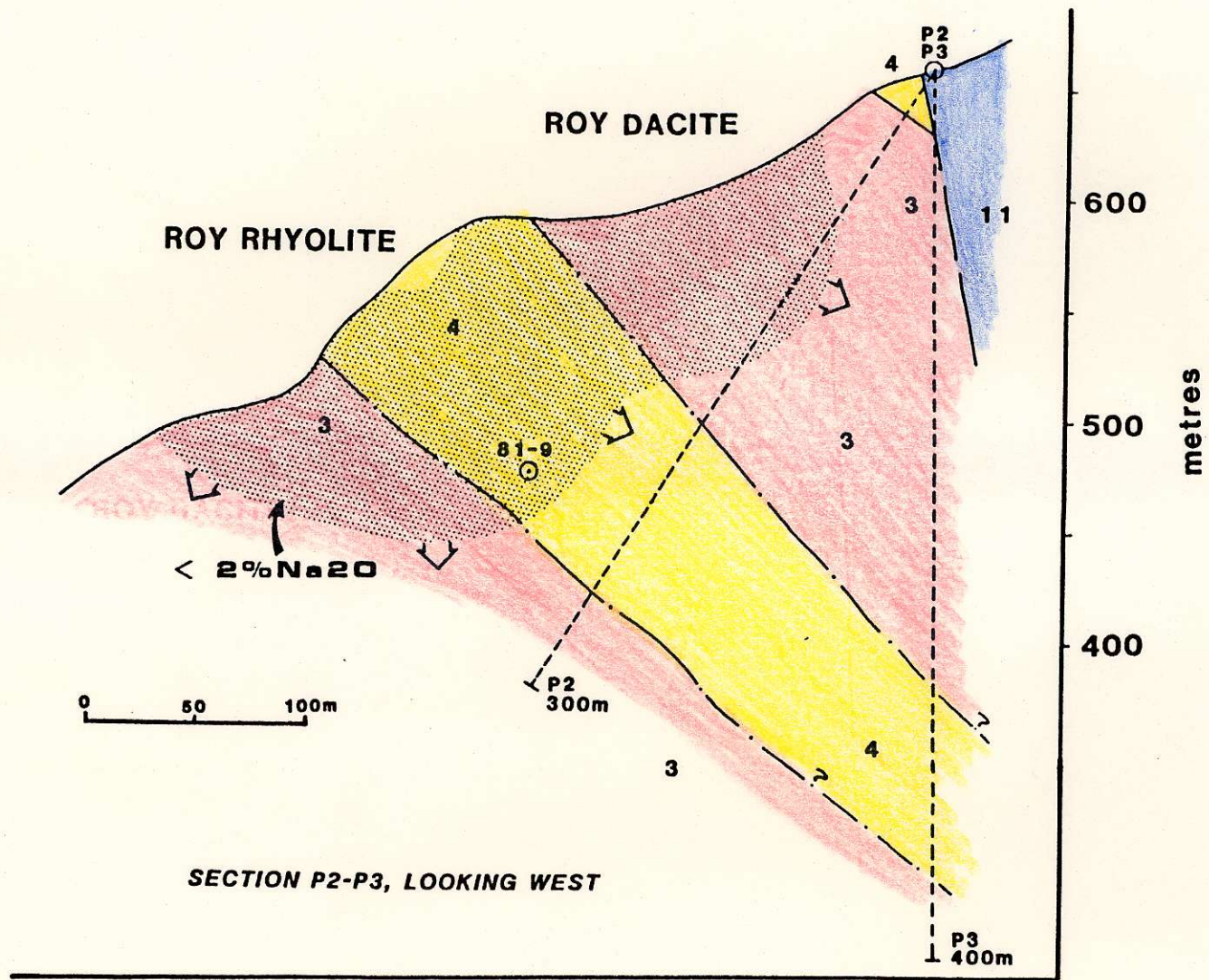


FIGURE 11

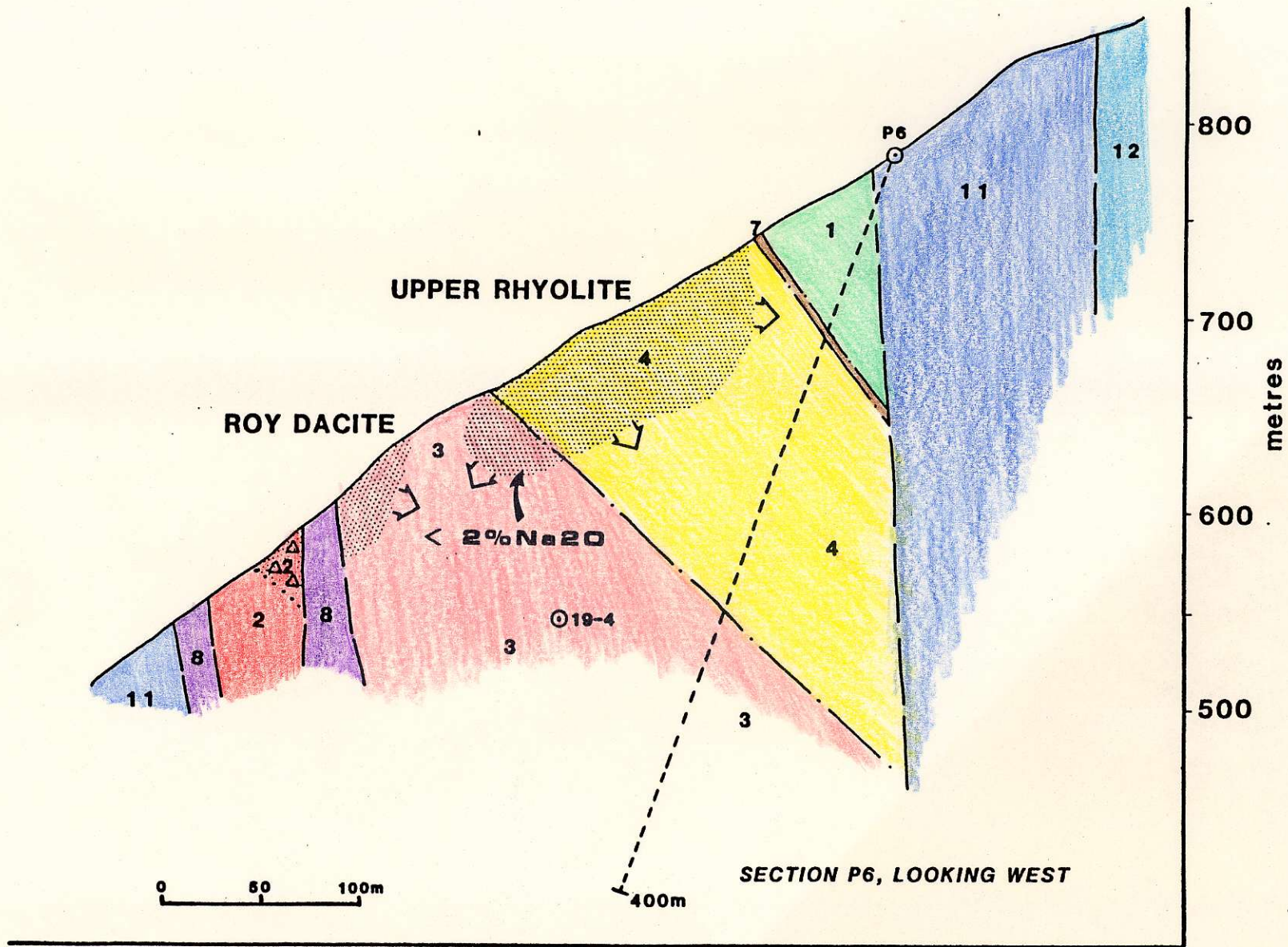
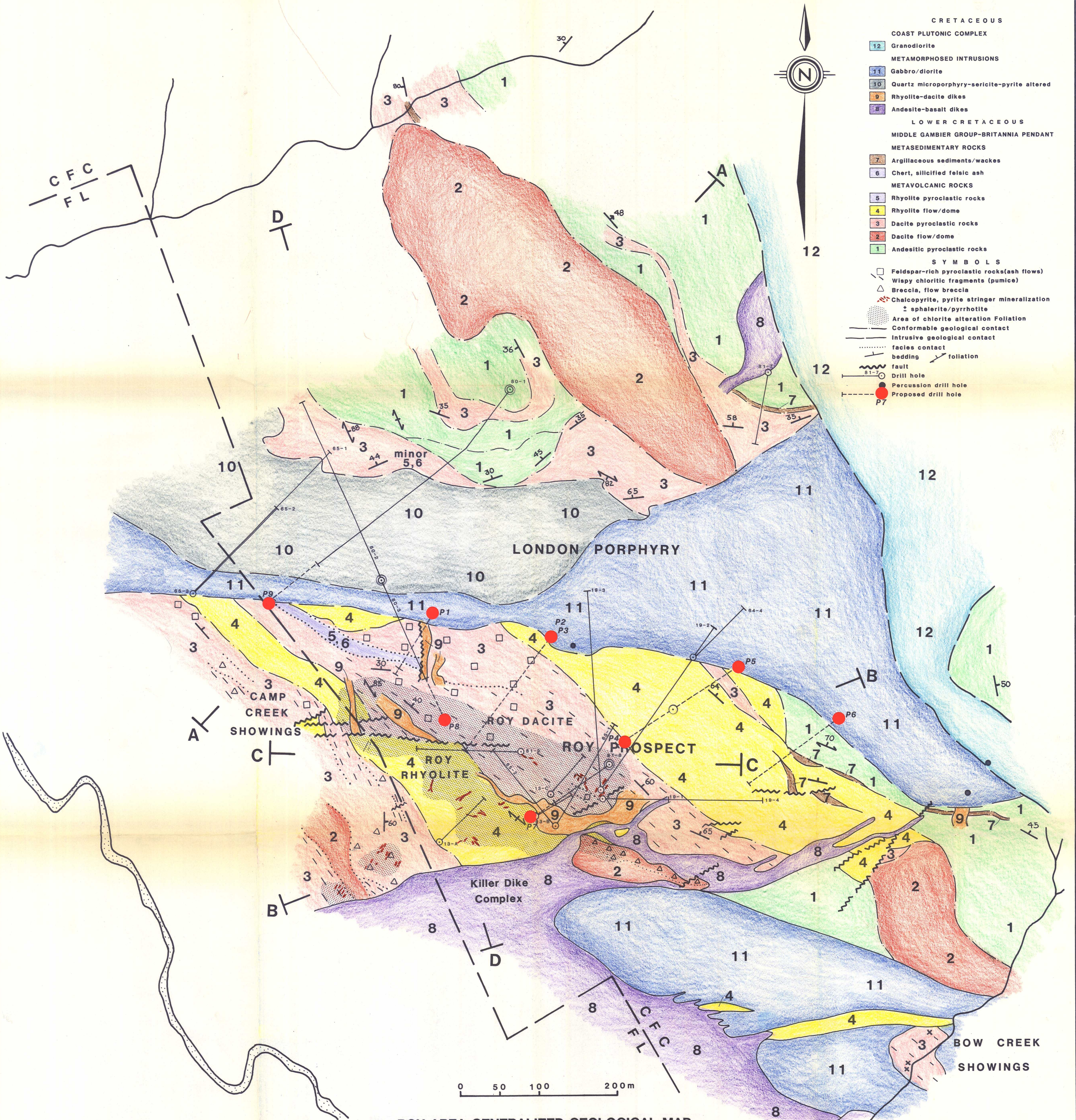


FIGURE 12

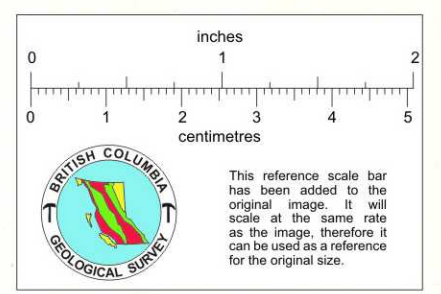
FIGURE 2
LEGEND

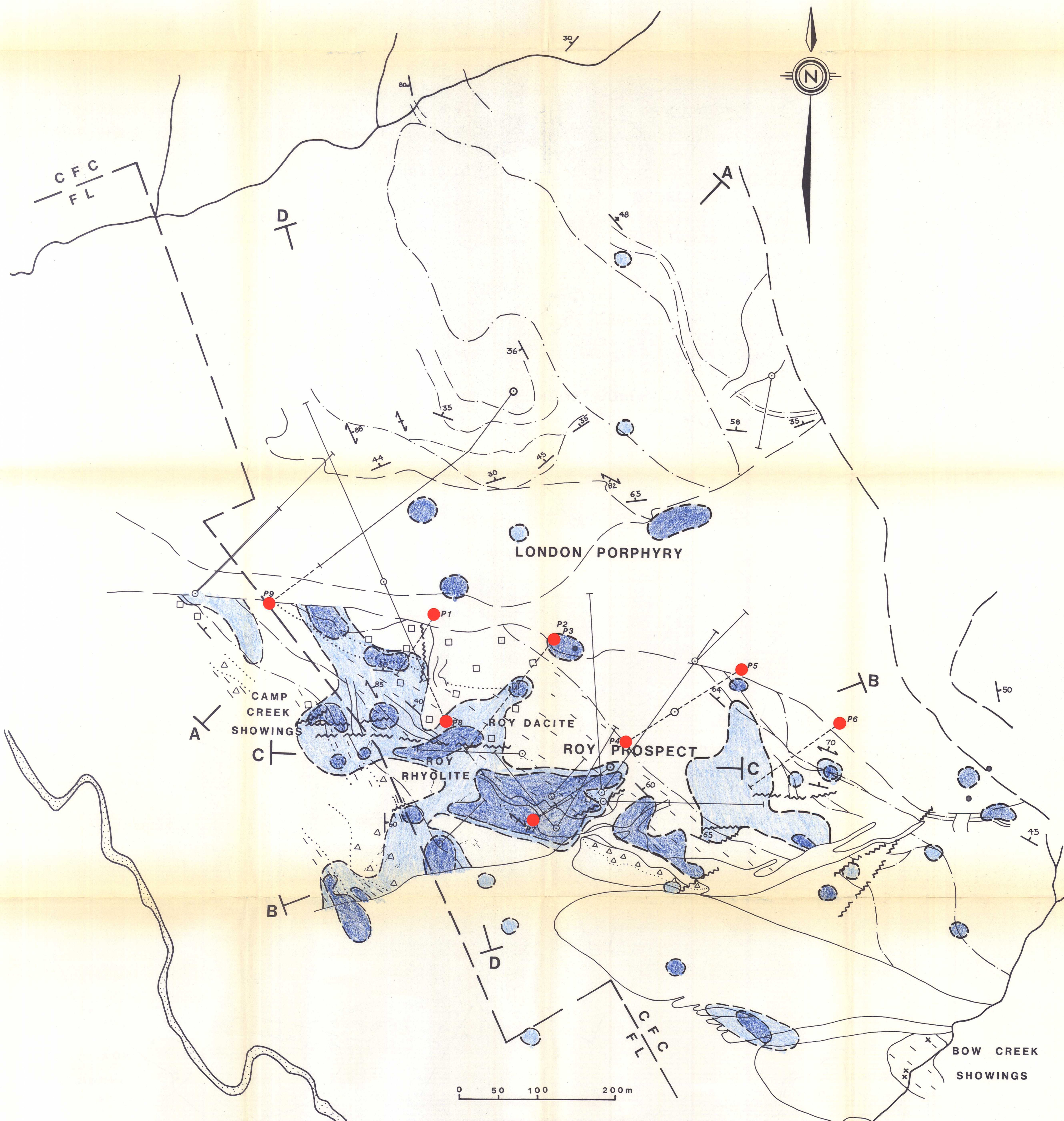


- CRETACEOUS**
- COAST PLUTONIC COMPLEX**
- 12 Granodiorite
- METAMORPHOSED INTRUSIONS**
- 11 Gabbro/diorite
 - 10 Quartz microporphry-sericite-pyrite altered
 - 9 Rhyolite-dacite dikes
 - 8 Andesite-basalt dikes
- LOWER CRETACEOUS**
- MIDDLE GAMBIER GROUP-BRITANNIA PENDANT**
- METASEDIMENTARY ROCKS**
- 7 Argillaceous sediments/wackes
 - 6 Chert, silicified felsic ash
- METAVOLCANIC ROCKS**
- 5 Rhyolite pyroclastic rocks
 - 4 Rhyolite flow/dome
 - 3 Dacite pyroclastic rocks
 - 2 Dacite flow/dome
 - 1 Andesitic pyroclastic rocks
- SYMBOLS**
- Feldspar-rich pyroclastic rocks (ash flows)
 - Wispy chloritic fragments (pumice)
 - △ Breccia, flow breccia
 - ⊕ Chalcopyrite, pyrite stringer mineralization ± sphalerite/pyrrhotite
 - ⊞ Area of chlorite alteration
 - Foliation
 - Conformable geological contact
 - Intrusive geological contact
 - facies contact
 - bedding
 - foliation
 - fault
 - Drill hole
 - Percussion drill hole
 - Proposed drill hole



ROY AREA GENERALIZED GEOLOGICAL MAP
GEOLOGY BY HLG, SK, TM 1985





LITHOGEOCHEMISTRY
 Na_2O %
 < 2% [dark blue square]
 < 1% [light blue square]

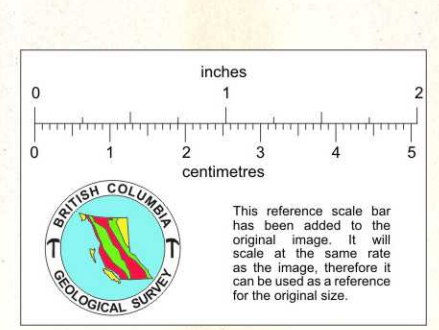


FIGURE 3

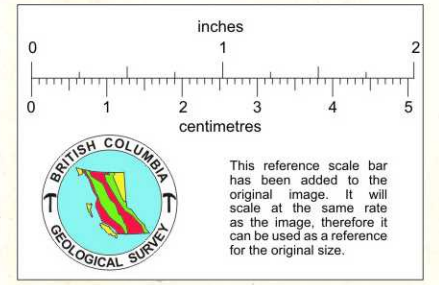
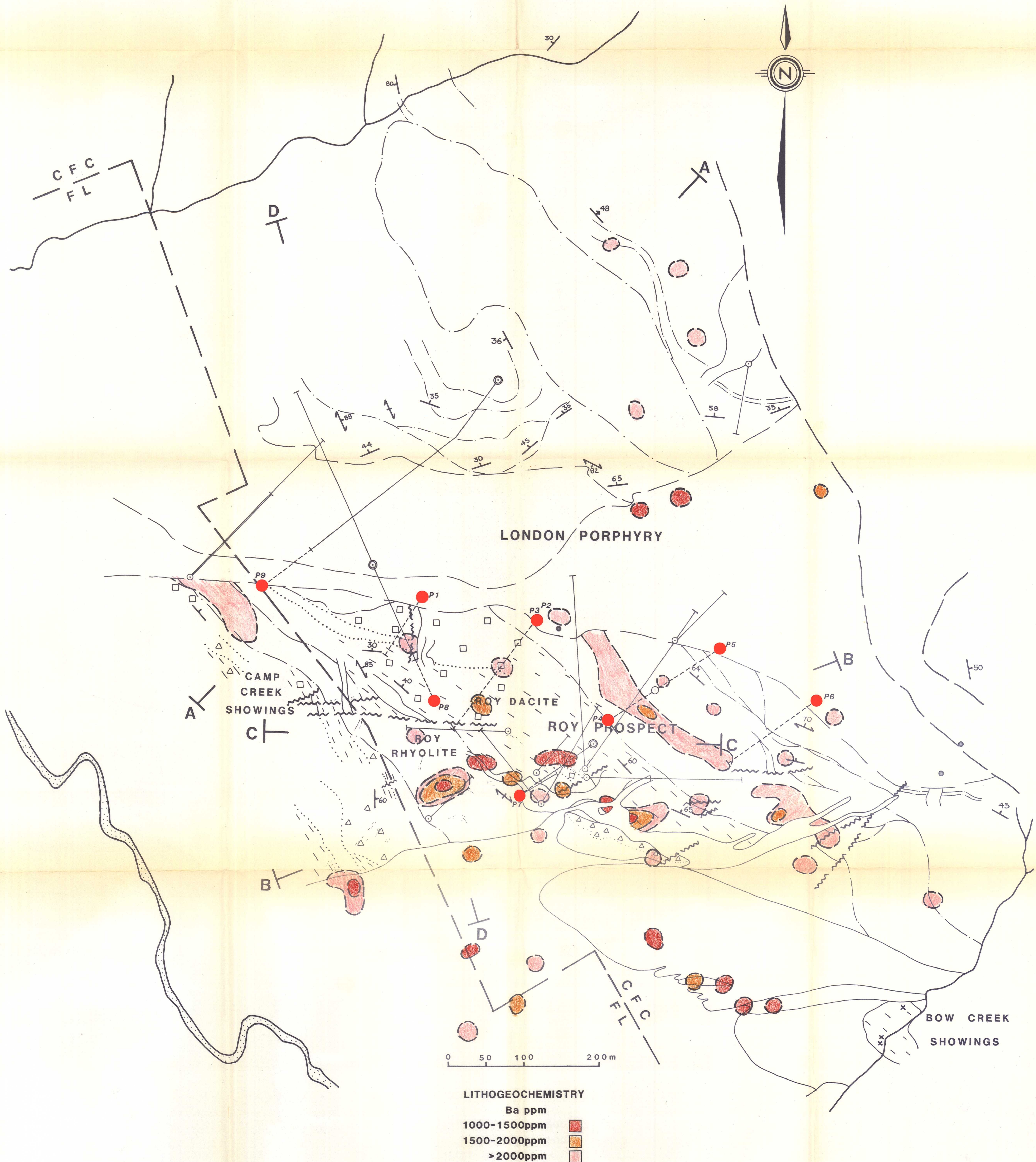
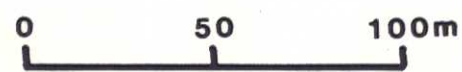
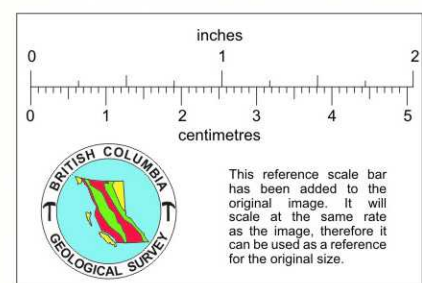
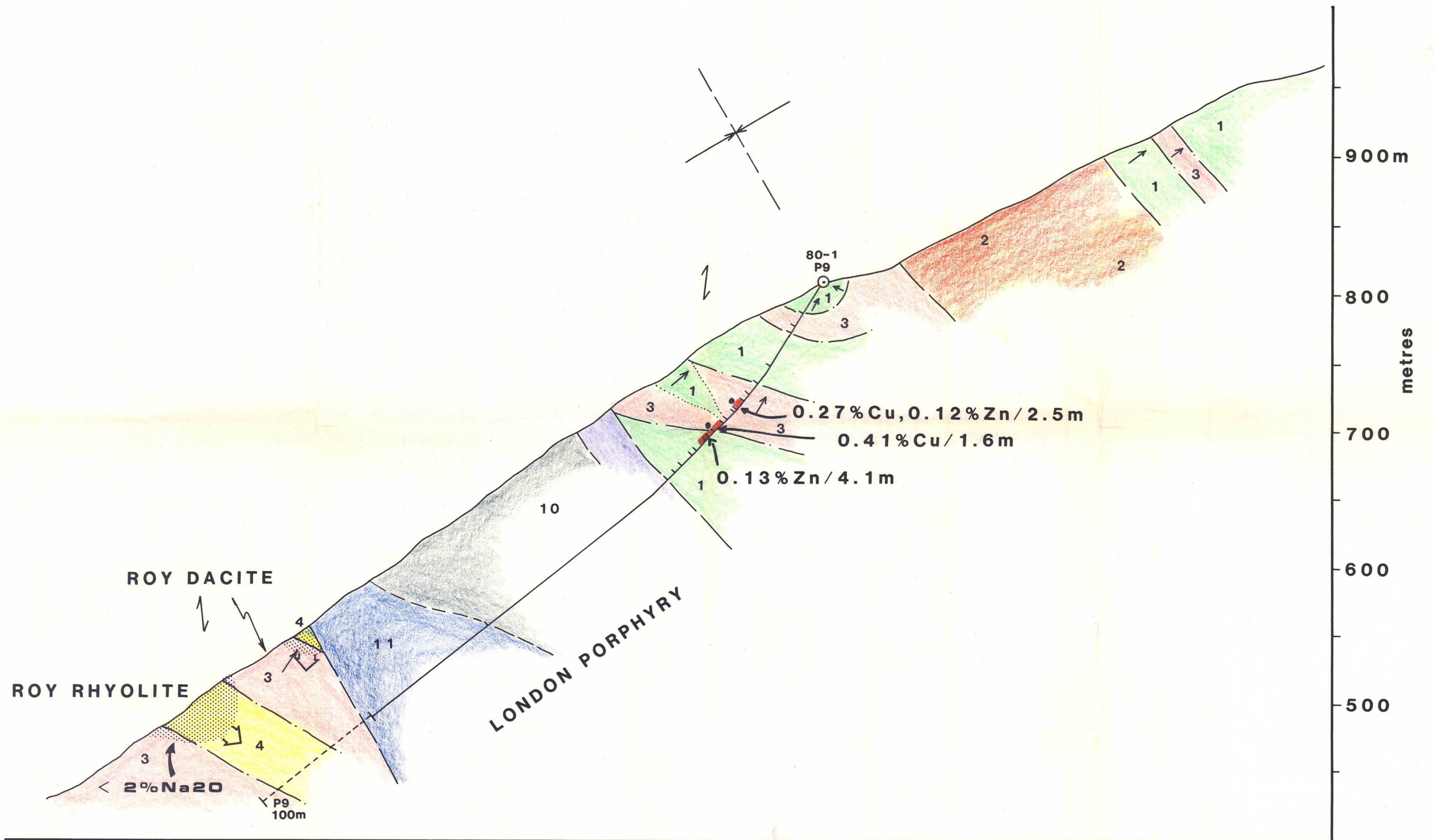


FIGURE 4

A

A

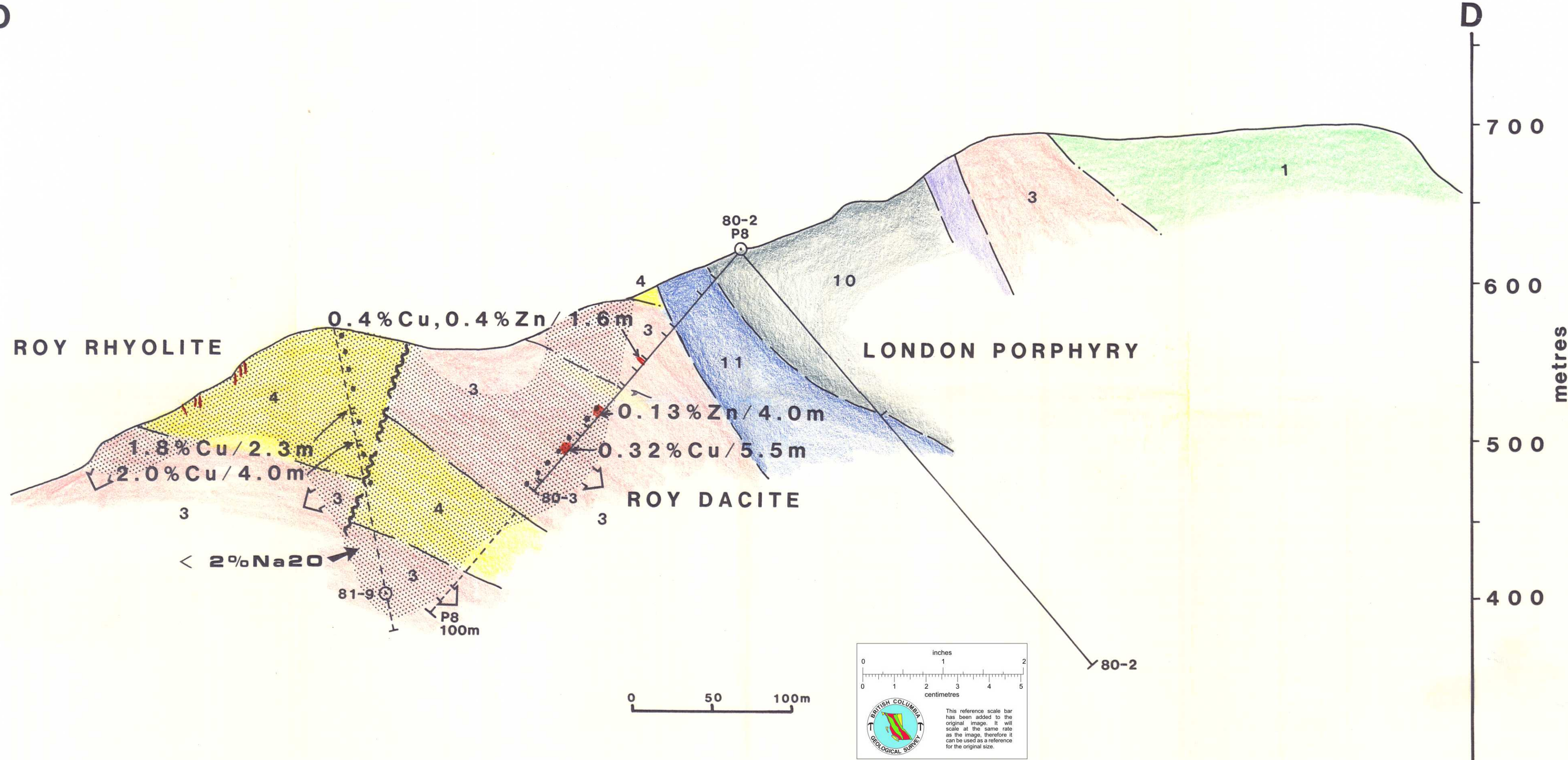


SECTION A-A, LOOKING WEST

FIGURE 5

D

D



SECTION D-D, LOOKING SOUTH

FIGURE 9