RICHARDSON GEOLOGICAL CONSULTING LTD.
4569 WEST 13TH AVENUE, VANCOUVER, B.C. V6R 2V5
TELEPHONE: (604) 224-4272

EXPLORATION

ON THE

LAD MINERAL CLAIM

NEW WESTMINSTER MINING DIVISION

BRITISH Columbia

92H/11W

Latitude 49°26'N; Longitude 121°16'W

FOR

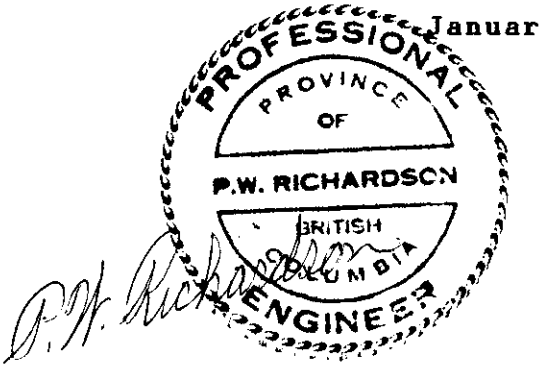
OWNER AND OPERATOR

PAUL W. RICHARDSON

BY

PAUL W. RICHARDSON, Ph.D,. P.Eng.

Vancouver, B.C. January 6, 1993



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SUMMARY

The LAD Claim is in the southeast part of the Coquihalla Gold Belt near Hope, B.C., and is adjacent on the east of the Carolin Mine Property. The 1992 Programme was undertaken to inspect access to the Property, to examine exposures of rock along Ladner Creek and to pan the creek in order to inspect gold particles in the stream sediments above, within and downstream from the LAD Claim.

Access was found to be difficult primarily because of waterfalls in the creek and of cliffs bordering the creek. However, in periods of low water most of the creek can be traversed from downstream. Only unmineralized Ladner Group slates and schists were observed in the reconnaissance traverses. Four sites were panned and concentrates were collected. Micromounts of contained gold particles were made from each concentrate. It was confirmed that both copper-poor and copper-rich gold particles occur in Ladner Creek, and it was found that both types occur in the creek above the LAD Claim. Insufficient work was done to determine whether the train of placer gold was augmented by gold particles originating within the LAD Claim, and a programme of fieldwork is recommended to investigate this possibility.

INTRODUCTION

The LAD Claim lies in the southeastern part of the Coquihalla Gold Belt. The Claim is adjacent on the east of the Carolin Mine Property, and covers rocks similar to but higher stratigraphically than those at the mine. It has been suggested that old workings exist on the Claim, but, if so, their locations are unknown.

The 1992 Programme was undertaken as an initial programme to inspect the access to the Property, to examine the outcrops along Ladner Creek and to pan the creek to seek variations of gold content and type along the creek where it runs through the Claim.

LOCATION AND ACCESS

The LAD Claim is in the New Westminster Mining Division, British Columbia, at latitude 49 26'N, longitude 121 16'W on NTS 92H/11W (Figure 1). The Property is 130 km east of Vancouver and 20 km NE of Hope.

Access from Vancouver is by paved road via Highway 401 to Hope and then 23 km via Highway 5 (the Coquihalla Highway) to the Carolin Mine Turnoff (Figure 2). A good, gravel mining road leaves Highway 5 and goes 5.0 km to the Carolin Mine (Figure 3). This road gives access to the SW Corner of the LAD Claim. Access to the E boundary of the claim is given by a separate logging road which lies on the east side of the main north branch of Ladner Creek (Figures 2 to 4). Other than the two roads and the creek, there is no easy access to or within the LAD Claim.

Some accessible areas of the Claim have been logged, and some still are covered with commercial evergreen timber. In general, the topography of the LAD Claim is steep and difficult.

LAD CLAIM
92H/11W

LOCATION MAP
FIGURE 1

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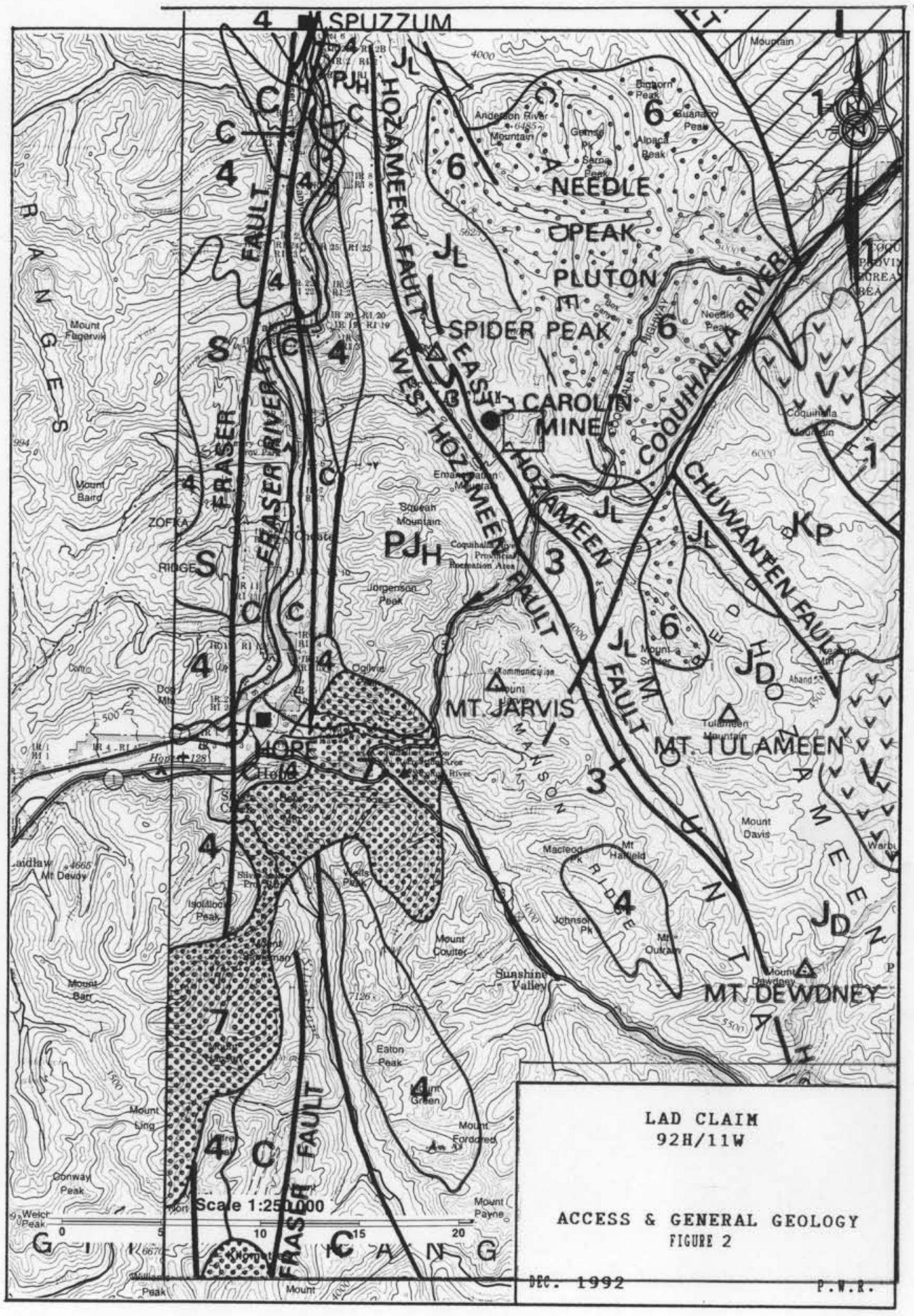

LAD CLAIM
92H/11W

ACCESS & GENERAL GEOLOGY
FIGURE 2

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UNMAPPED AREAS

NP — **NEEDLE PEAK PLUTON (EOCENE)**
GRANITE AND GRANODIORITE

K_J — **JACKASS MOUNTAIN GROUP (LOWER CRETACEOUS) WITH SOME DEWDNEY CREEK GROUP (UPPER JURASSIC)**
WACKE AND CONGLOMERATE

J_D — **SEDIMENTARY ROCKS OF UNCERTAIN AGE POSSIBLY DEWDNEY CREEK GROUP (UPPER JURASSIC ?)**
WACKE AND SILTSTONE

J_L — **LADNER GROUP (JURASSIC)**
ARGILLITE, SILTSTONE, MINOR WACKE, AND CONGLOMERATE

T_{RV} — **SPIDER PEAK FORMATION (LOWER TRIASSIC ?)**
GREENSTONE AND GABBRO, RARE SEDIMENTARY ROCKS

HOZAMEEN GROUP (PERMIAN TO JURASSIC)

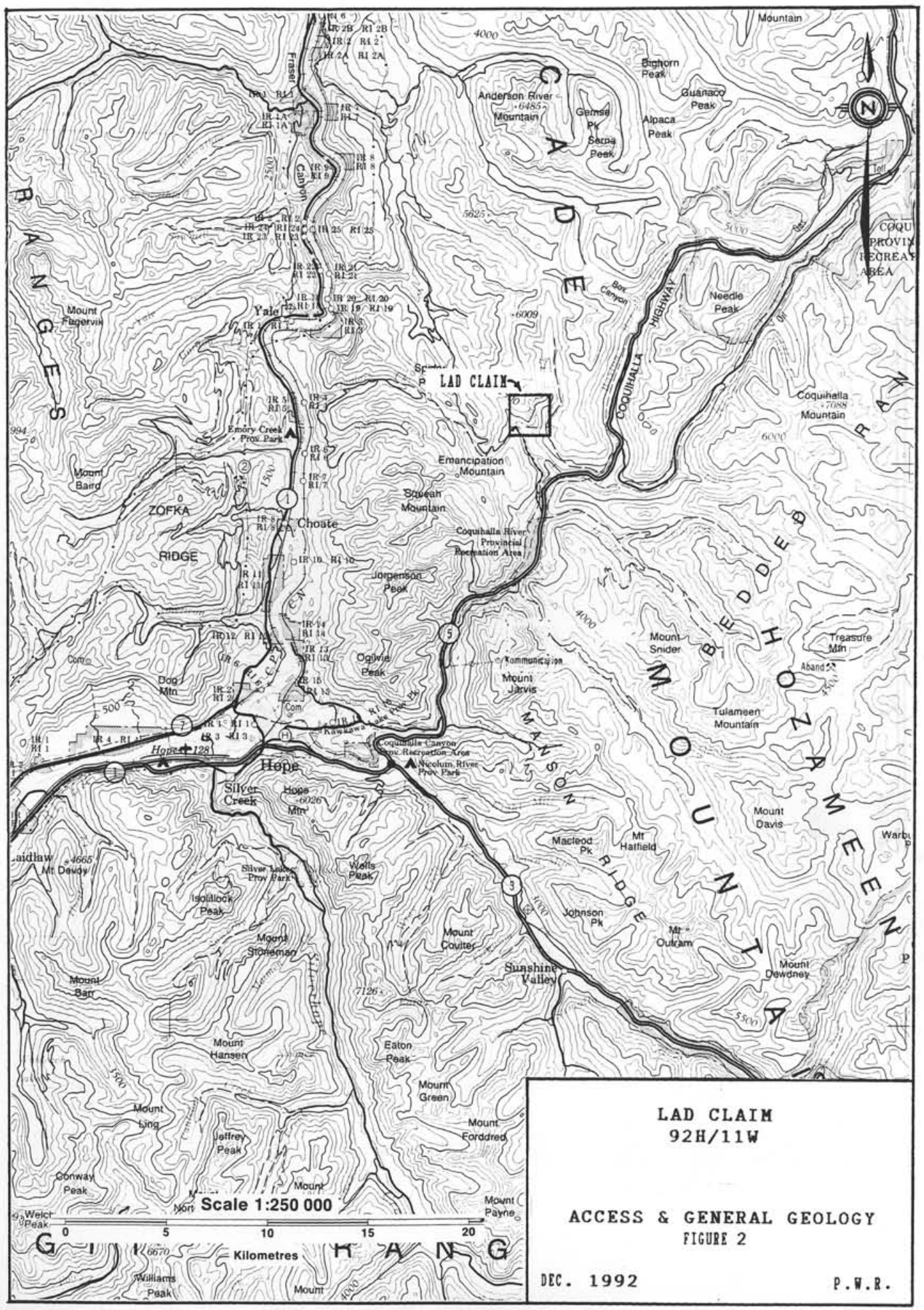
PJ_C — MAINLY CHERT

PJ_V — GREENSTONE AND GABBRO

C — PETCH CREEK SERPENTINE BELT

B — **COQUIHALLA SERPENTINE BELT**
SERPENTINITE AND GABBRO

A — **GRANITIC ROCKS**
CUSTER — SKAGIT GNEISS AND YOUNGER INTRUSIVE ROCKS



LAD CLAIM
92H/11W

ACCESS & GENERAL GEOLOGY
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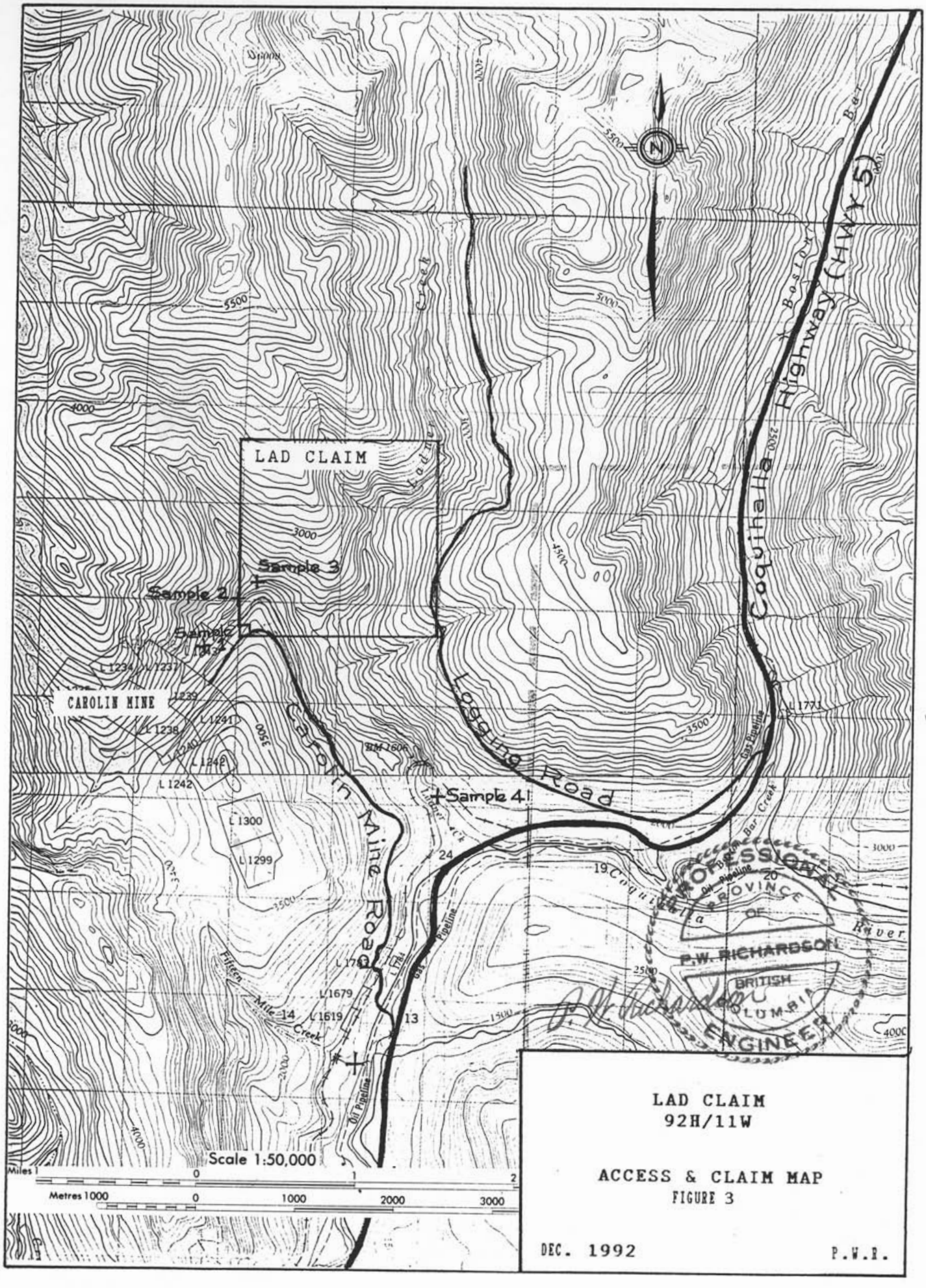
CLAIM

The LAD Claim totals 16 units (Figure 3). The pertinent claim data are as follows:

Name	Document No.	No.of Units	Record Date	Expiry Date
LAD	305468	16	Oct.18'91	Oct.18'93*

The above data conform with the records in the Vancouver Recording Office of the British Columbia Ministry of Energy, Mines and Petroleum Resources. The Claim is 100% owned by Paul W. Richardson.

* This date will be correct when the work applied, supported by the present report, has been approved.



LAD CLAIM
92H/11W

ACCESS & CLAIM MAP
FIGURE 3

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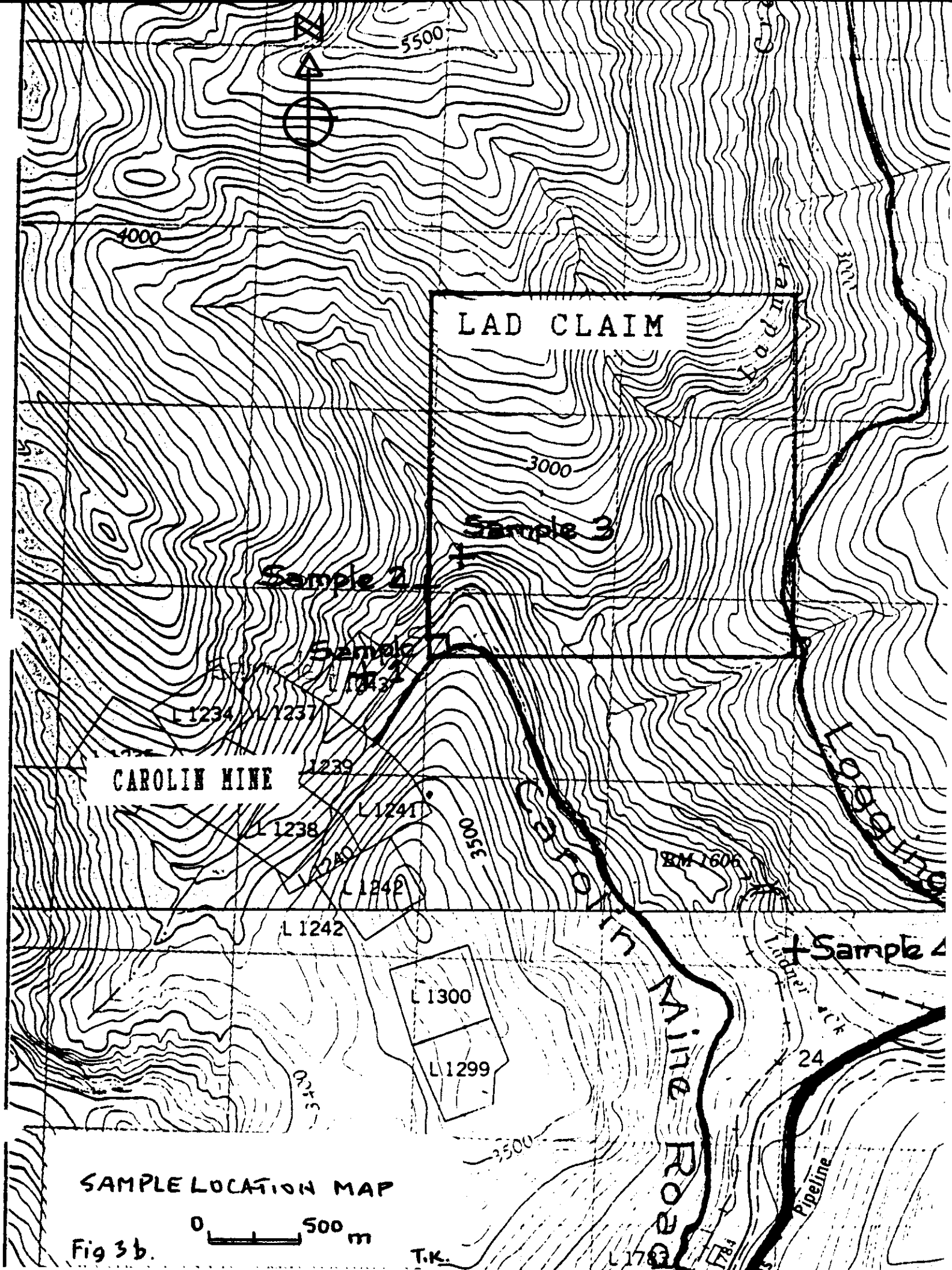


SAMPLE LOCATION MAP

Fig 3b.

HISTORY

Gold was discovered in several places in British Columbia in the early 1850's, and was discovered in quantity near Yale in 1858 (Figure 2; Bulletin 21). Prospecting along the tributaries of the Fraser River followed, and gold was discovered in the Coquihalla River and Ladner Creek, among others. Placer gold was followed up Ladner Creek to the Carolin Mine area and to the nearby properties, especially the Aurum and the Pipestem.

REGIONAL GEOLOGY

The structure of the area is dominated by the Hozameen Fault which is 100 km in length and is one component of the Fraser River Fault System (Figure 2). In places, the Hozameen Fault is associated with the ultrabasic rocks of the Coquihalla Serpentine Belt (Ray, 1990; Figure 2). The Hozameen and Pasayten faults are the western and eastern boundaries of the Pasayten Trough in which turbidite and successor basin sedimentary deposits predominate. They range from Early Jurassic to Middle Eocene in age.

Unconformably underlying the Pasayten Trough and forming its basement are volcanic greenstones, the Spider Creek Formation, which form a narrow, discontinuous strip that generally separates the Ladner Group to the east from the Hozameen Fault and the Coquihalla Serpentine Belt to the west.

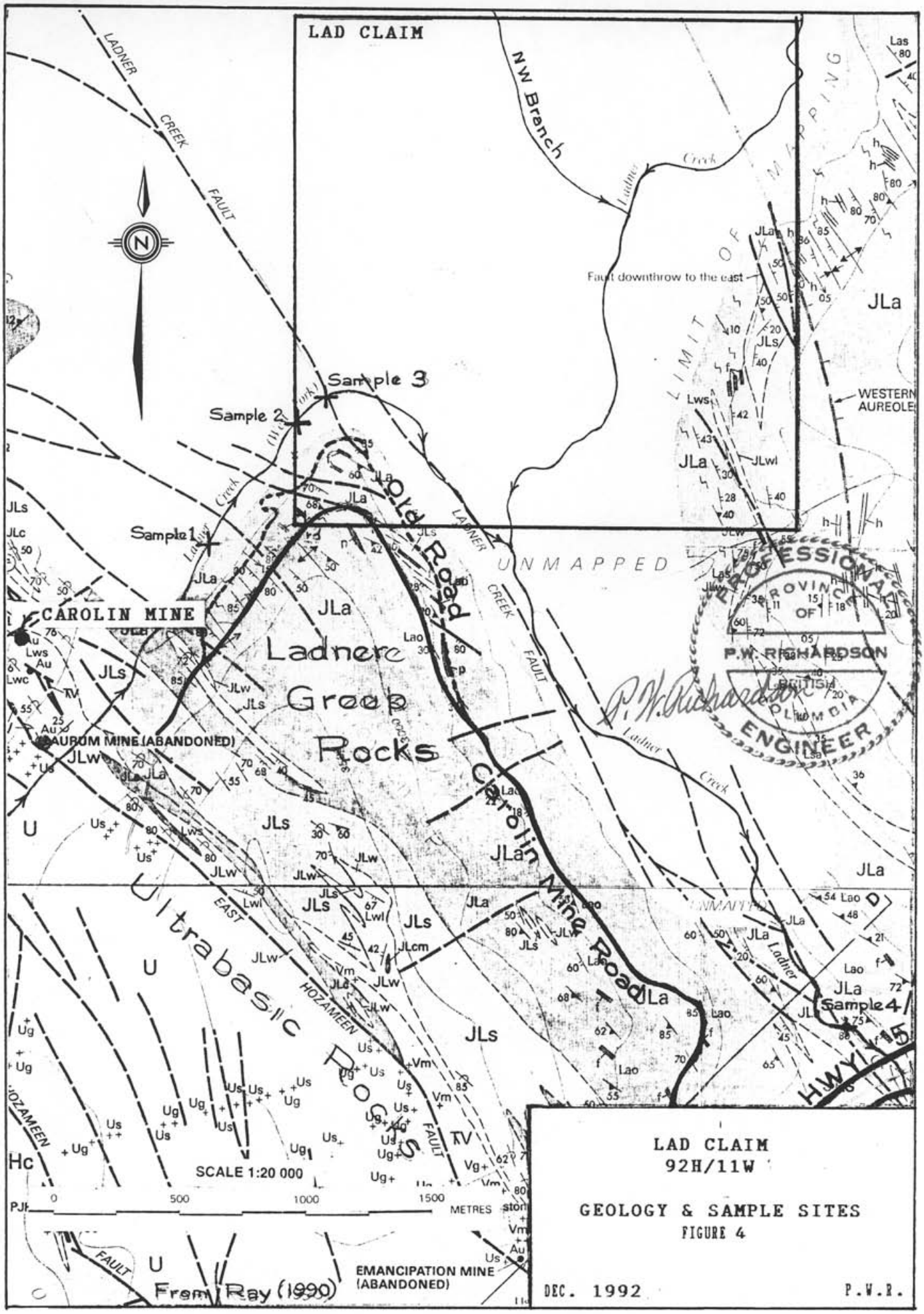
The rocks east of the Hozameen Fault, in this area the Ladner Group, are intruded by one major intrusion of granite-granodiorite, the Needle Peak Pluton, and by a variety of small intrusive bodies ranging in composition from gabbro through granodiorite to syenite (Figure 2). Felsic sills and dykes are common in Ladner Group rocks.

The Ladner Group consists of Lower to Upper Jurassic marine siltstones, argillites and wackes resting unconformably on the volcanic rocks of the Spider Peak Formation.

The structure of the Hozameen Fault is complex. It is interrupted by later cross-faulting and its dip varies along strike. Near the United States border the fault dips steeply west, but in the Coquihalla-Boston Bar area the dips are steeply east. In the Coquihalla River area, two branches of the Hozameen Fault enclose the Coquihalla Serpentine Belt which locally reaches two kilometres in outcrop width (Figure 2).

PROPERTY GEOLOGY

The geology on the LAD Claim has not been mapped except in the SW corner and along the east boundary (Ray, 1990; Figure 4). However, it appears that the Claim is underlain entirely by Ladner Group argillites and wackes. The Ladner Creek Fault crosses the road-accessible SW corner of the Claim, and possibly the cross faults that occur near the Carolin Mine and north of it extend on to the Claim, It has been postulated that the gold in the Coquihalla Gold Belt is related to the Hozameen Fault and the cross faults.



LAD CLAIM
92H/11W

GEOLOGY & SAMPLE SITES
FIGURE 4

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MINERALIZATION

The targets on the LAD Claim are gold deposits similar to those at the nearby Carolin Mine and the satellite deposits in the vicinity of the mine. The known deposits occur in silicified and albitized zones with accompanying pyrite, pyrrhotite, chalcopyrite and arsenopyrite. They were probably found by tracing placer gold up Ladner Creek to several source areas, but there may be additional source areas.

Placer gold in Ladner Creek and the surrounding district has been studied using modern techniques (Knight & McTaggart, 1986, 1989, 1990). Samples of gold panned from the mouth of Ladner Creek were of mixed provenance with some gold particles having copper-poor compositions similar to those obtained from gold samples collected at the Carolin Mine and the Aurum deposit. Some of the gold particles contained 1-10% Cu and are of a type not yet found in any of the lodes in the area. A third type, which is very copper-rich containing 12-23% Cu, occurs in 15 Mile and Sowaqua creeks and in Coquihalla River placer samples and has been identified in the 15 Mile Creek Lode (Figure 3).

THE 1992 PROGRAMME

(a) GENERAL

The objects of the 1992 Programme were to visit the Property to determine the access along Ladner Creek, to inspect the outcrops of Ladner Group rocks along the creek and to pan the creek to measure the amount and types of placer gold above, within and below the LAD Claim. Essentially, the programme was planned to make use of the available data on the composition of the three main types of gold in the region in order to detect the presence of undiscovered gold deposits, keeping in mind that the excellent analytical techniques of Knight and McTaggart are not available to the writer (Knight & McTaggart, 1986, 1989, 1990). However, it is possible to recognize, qualitatively, copper-rich gold by its darker, bronzy colour and by its association with ultrabasic rocks. That there are undiscovered gold deposits in the area is indicated by the presence of placer gold containing 1-10% Cu, no examples of which have yet been found in lode deposits in the Ladner Creek drainage. In addition, undiscovered deposits similar to the copper-poor Carolin and Aurum deposits may be present.

The gold investigation consisted of sampling each site by selecting a good accumulator area at or close to the centre of the stream behind or under boulders, being careful to collect gravelly samples rather than sand. Approximately

5-7 large panfulls were roughly panned at each site, and the concentrates combined in a small pan. The small pan of the combined rough concentrates was panned within the large pan twice to make a small, high grade concentrate. The high grade, small volume concentrate was later dried and, without removing the magnetic portion, spread on squared paper for examination under a binocular microscope. All the gold particles were removed with a moistened, pointed wooden sliver and placed on a micromount of double sided, sticky tape for storage and examination.

In streams where platinum is present, such as the Fraser, Tulameen and Similkameen rivers and Whipsaw Creek, part of the platinum is magnetic enough to be removed by a hand magnet. This indicates that the whole sample should always be used in case magnetic platinum is present, even in streams where platinum has not yet been recognized.

The present programme was made difficult by the topography of the LAD Claim. The first approach was down along Ladner Creek from the Carolin Mine toward the west boundary (Figure 4). Just below Sample 1, an impassable waterfall occurs in the stream bed with cliffs on each side. A second approach was made by proceeding east along the old road below the present Mine Road and descending a steep slide to the site of Sample 2 on the west boundary of the LAD Claim which is below the first waterfall. Below this

for 150 m the stream is readily walkable to the site at Sample 3 below which is another impassable waterfall.

It is now apparent that the long approach up Ladner Creek is probably the best access to the LAD Claim (Figure 4). Another possible approach is from the old road down a slide which is approximately opposite the junction of the north and west forks of Ladner Creek. From the junction, however it is approached, the West Fork may be traversed and sampled westward to the lowest waterfall, and the North Fork traversed and sampled through the claim. The North fork has a tributary, named herewith the NW Branch, which will supply samples up to the N border of the Claim.

(b) RESULTS OF THE FIELDWORK

(i) The outcrops examined along Ladner Creek down from the west boundary of the LAD Claim to the top waterfall were unmineralized Ladner Group slates and schists as were the outcrops examined on two traverses from the lower abandoned road down to Ladner Creek.

(2) Gold from the four concentrate samples was mounted on micromounts and examined (Appendix 1). The particles became, on the average, more rounded down stream and the bronzy (copper-rich) gold was more rounded than the

lighter yellow (copper-poor) gold. Abundant, fine-grained euhedral pyrite occurred in Sample 4.

CONCLUSIONS

(1) The Property is difficult of access, but may be traversed along the two main branches of Ladner Creek in periods of very low water. The traverses will be discontinuous because of waterfalls.

(2) Gold is present in both copper-rich and copper-poor particles, and the two types occur along the west branch of Ladner Creek through and above the LAD Claim.

(3) Abundant pyrite occurs in Ladner Creek at the site of Sample 4. The source of the pyrite is, as yet, unknown.

(4) For conclusions to be made whether the train of gold particles in Ladner Creek has been augmented by gold sources within the LAD Claim, many more panned concentrates will have to be made and examined.

RECOMMENDATIONS

(1) Traverse Ladner Creek from the site of Sample 4 to the forks and then traverse each branch, panning at about 200 m intervals, depending on the presence of good placer accumulation sites.

(2) Attempt to obtain easier access to the forks area by way of a slide down from the old road.

(3) Continue to examine the rocks along the creek. If there are areas of alteration or quartz veining, tie in the data with a compass and tape survey.

(4) Attempt to find traces of old walking or packhorse trails in areas of suitable topography, and note any old trenches or other workings.

STATEMENT OF COSTS

(1) Personnel			
P.W. Richardson	3.3 days @ $400/day	$1320.00	
H.G. Richardson	1.0 days @ $150/day	150.00	$1470.00
(2) Vehicle			
Vehicle (2 wheel drive)	2 days @ $40	80.00	
Gasoline		50.09	130.09
(3) Meals			19.74
(4) Telephone			3.52
(5) Report			
P.W. Richardson	2.0 days @ $400/day	800.00	
Typing, Xeroxing, maps		95.88	895.88
TOTAL			$2519.23

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(1) Bateman, A.M. (1911) "Geology of Fraser Canyon and Vicinity, B.C.; Siwash Creek Area." Geological Survey Branch. Summary Report for 1910.

(2) Cairnes, C.E. (1920) "Coquihalla Area" Geological survey summary Report, 1920, Part A, p.23.

(3) Cairnes, C.E. (1924) "Geology of the Hope Area, B.C." Geological survey of Canada Memoir 139.

(4) Cairnes, C.E. (1929) "The Serpentine Belt of Coquihalla Region" Geological Survey Summary Report, 1929A, p.194A.

(5) Cairnes, C.E. (1942) "Hope" Geological Survey of Canada Map #737A - Compilation Map with Notes.

(6) Knight, John and McTaggart, K.C. (1986) "The Compositions of placer and lode gold from the Fraser River drainage area, southwestern British Columbia" Canadian Institute of Mining and Metallurgy, Geological Journal Vol.1, No.1.

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(9) Ray, G.E. (1990) "The Geology and Mineralization of the Coquihalla Gold Belt and Hozameen Fault System" B.C. Ministry of Energy, Mines and Petroleum Resources, Bulletin 79.

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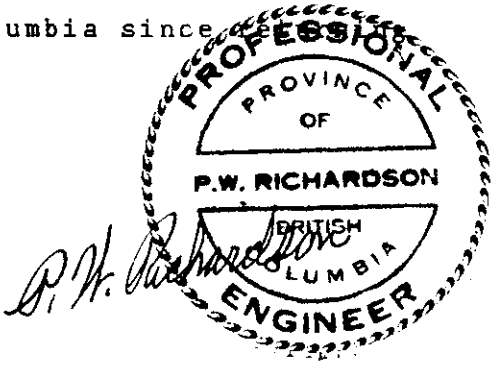
STATEMENT OF QUALIFICATIONS

The writer is a graduate of the University of British Columbia with B.A.Sc.(1949) and M.A.Sc.(1950) degrees in Geological Engineering and a Ph.D.(1955) degree from the Massachusetts Institute of Technology in Economic Geology and Geochemistry.

The writer has done fieldwork in mines and on exploration programmes, except in periods at university, since 1945, and has participated in numerous programmes which included geochemistry since 1953. He has a working knowledge of the major types of geophysics based on fieldwork in the Maritimes, Northern Ontario and Quebec, British Columbia, the Yukon and Alaska, and has carried out or supervised many property examinations and diamond drilling programmes in these regions since 1950.

The writer has been a Member of the Association of Professional Engineers of British Columbia since coming to British Columbia in 1966.



APPENDIX I

Description of Panned Concentrates

Description of Panned Concentrates

Sample 1 - Ladner Creek 150 m downstream from portal settling pond at Carolin Mine. Gold consisted of 29 particles 0.1-1.0 mm in size of both light yellow and bronzy colour. Some particles skeletal with some lighter yellow particles with crystal faces.

Sample 2 - Ladner Creek at west boundary LAD Claim. Gold consisted of 57 particles 0.05-0.45 mm in size of both light yellow and bronzy colour. The largest particle was bronzy and more compact (less irregular) in shape. Some of the smaller particles quite skeletal.

Sample 3 - Ladner Creek 150 m east of west boundary of LAD Claim. 24 gold particles 0.05-0.4 mm in size. Mixed colours. The bronzy particles slightly rounded on edges and corners and the light yellow gold less rounded. Some particles are subhedral crystalline.

Sample 4 - Ladner Creek 250 m upstream from Coquihalla Highway. Three particles 0.1-0.5 mm. All light coloured but sample too small to be significant. Particles more rounded than those in Samples 1-3. Samples contained abundant, euhedral pyrite which was present in insignificant amounts in Samples 1-3.