

GEOCHEMISTRY ON THE KANGAROO PROPERTY  
KANGAROO 1-3, WANK 1-4 MINERAL CLAIMS  
CARIBOO MINING DIVISION

NTS 93A/11W

LATITUDE 52 32'N      LONGITUDE 121 23'W

DATES OF WORK:      May 1, 1983 - June 8, 1983

OPERATOR:                      E & B EXPLORATIONS INC.  
   #1440-800 West Pender Street  
   Vancouver, B.C.

CONTRACTOR:                      JMT SERVICES CORP.  
   8827 Hudson Street  
   Vancouver, B.C.

WRITTEN BY:                      G.G. Richards, P.Eng.

SUBMITTED                      September 20, 1983

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**11,555**

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## INTRODUCTION

The initial mineral claims on the property were staked May 25, 1981 based on earlier reconnaissance geochemical sampling by JMT personnel, which indicated anomalous values in gold and arsenic from soils and silts.

The 1981 geochemical data released by the Ministry of Energy, Mines and Petroleum Resources on May 26, 1981 also indicated arsenic values on an historic placer creek (sample 1182) draining into the southeast end of Spanish Lake. This information prompted additional staking which was completed by May 26, 1981.

Reconnaissance sampling in the area was done on account of the occurrence of rich placer gold on the lower part of Cedar Creek about 5 miles west of the property. Lode gold occurrences on the north end of Spanish Mountain have been explored intermittently for many years and placer gold is present in Spanish Creek.

One gold geochemical target on the property occurs along an andesite tuff-argillaceous phyllite contact. The other gold geochemical target occurs in argillites and tuffs at the edge of extensive overburden cover. Broad scale geochemical coverage was completed in 1983 from the collection of 512 samples, 76 of which were rock chips, 12 were silt samples and 424 were soil samples. More detailed mapping and sampling is now required in the two areas described above.

LIST OF ILLUSTRATIONS

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FIGURE 3    GEOLOGY AND GEOCHEMISTRY	In Pocket



<b>JMT SERVICES CORP.</b>			
<b>PROPERTY LOCATION MAP</b>			
SCALE			
Mile 1:36		1:36 Mile	
Prepared by:	Date:	NTS MAP AREA	DRAWING No.
Drawn by:	Revised:	93 - E	

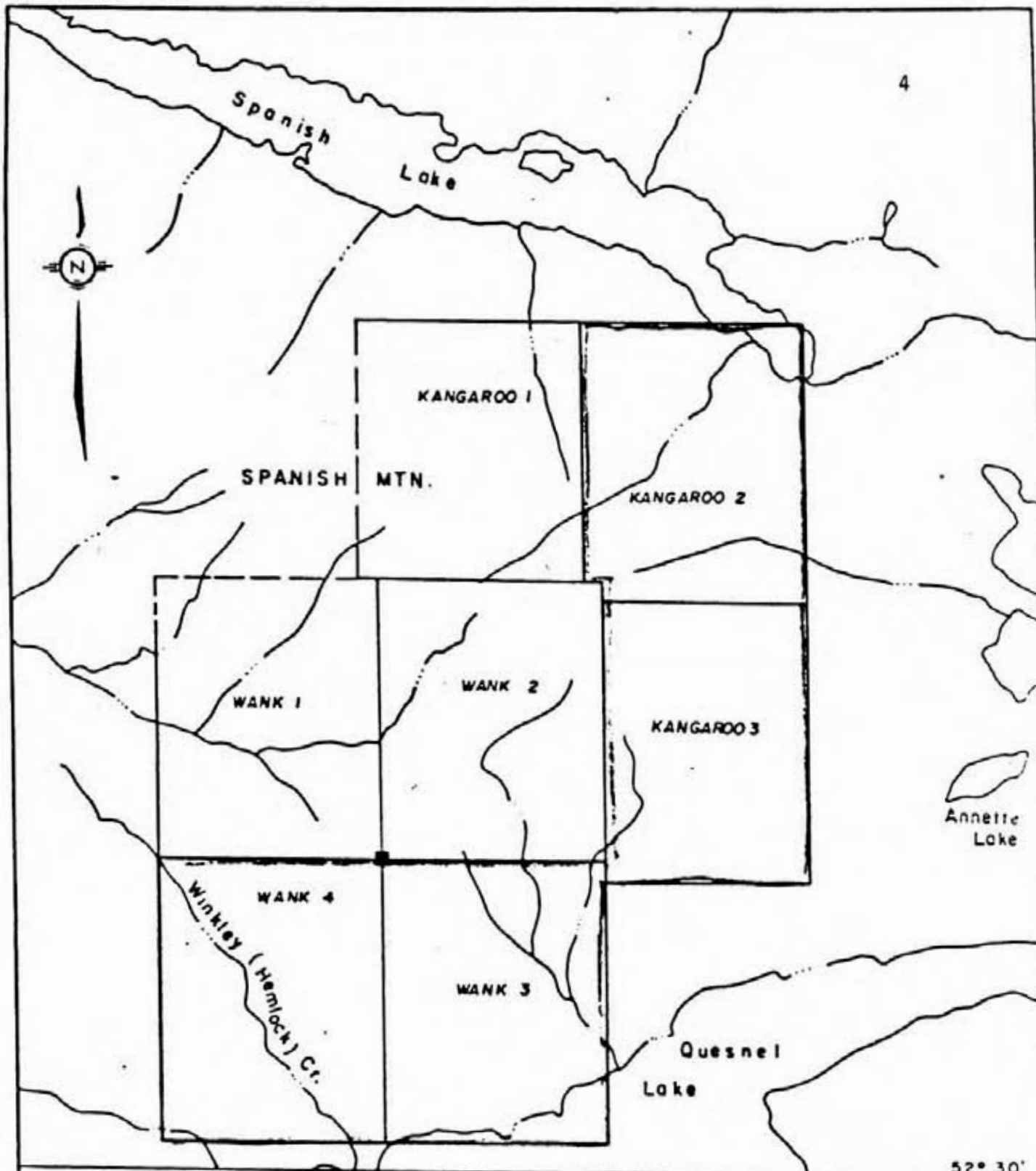
#### LOCATION AND ACCESS

The property covers much of the east flank of Spanish Mountain extending to the north shore of Quesnel Lake at the mouth of Winkely Creek. It includes the headwaters of Cedar Creek, and the principal drainages into the southeast end of Spanish Lake. It is situated about 15 km southeast of the town of Likely from which point a network of good logging roads lead to the property area. An attractive feature of the property is that existing road access is sufficiently good to permit exploration work to be completed by traversing from existing roads. There is no need for helicopter or other special transportation which substantially reduces exploration costs and facilitates any future work.

#### TOPOGRAPHY AND VEGETATION

The Spanish Mountain area is characterized by gentle to moderately steep slopes ranging from 2400-5000 feet in elevation. Bedrock exposures are not abundant, except along some roadcuts, some creeks and the steepest slopes. Overburden is deep enough in some areas to inhibit geochemical interpretation. Backhoe trenching would be effective in most areas.

Dense forest cover is characteristic of the area but 30-50% of the property has been clearcut-logged in recent years. Spruce, fir, balsam and cedar are the principal types of trees on the property.



KANGAROO PROPERTY  
CLAIM MAP

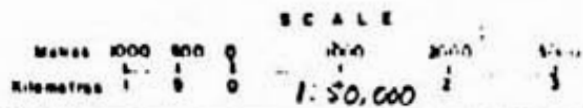


FIG. 6

## MINERAL CLAIMS

The property consists of 7 contiguous LCP claims (140 units) as listed below and shown on Figure 2.

<u>CLAIM NAME</u>	<u>UNITS</u>	<u>RECORD #</u>	<u>RECORD DATE</u>	<u>OWNER</u>
<u>KANGAROO PROPERTY</u>				
<u>LCP CLAIMS</u>				
KANGAROO #1	20	3714(6)	June 24/81	K.W. Livingstone
#2	20	3715(6)	"	"
#3	20	3716(6)	"	"
WANK #1	20	3717(6)	"	G.G. Richards
#2	20	3718(6)	"	"
#3	20	3719(6)	"	"
#4	20	3720(6)	"	"

## GEOLOGY

The southwestern portion of the claims is principally underlain by a mixed succession of intermediate to acidic volcano-clastic sediments ranging from coarse lapilli to argillites. The northeastern portion of the claims is principally underlain by foliated and/or metamorphosed rocks of the Cariboo group. A small area in the extreme southwestern portion (SW of Winkley Creek) is underlain by dark green hornblende and augite porphyry flows and agglomerates. The regional geology is depicted on G.S.C. map 3-1961 by R.B. Campbell.

Bedding within the volcanic sediments trends 105° to 140° and dips 20 to 60 to the northeast. Sediments tend to become generally



finer to the northeast and east on the property but grain size is locally variable and probably represents cyclical deposition.

In the southwest area of interest rocks are variably pyritic and weakly rusty. High values of arsenic and gold appear coincident with a generalized northwest trending zone of silica-carbonate alteration. The zone is generally conformable to bedding but not specific to any one bed. No distinct structural control is evident, although detailed inspection and mapping has not yet been completed.

In the northeast area of interest, the unconformity/fault contact between the Cambrian metasediments and the Jurassic-Cretaceous volcanics appears to be a control for anomalous gold geochemistry on the property. There may be several splays or anastomosing fault zones within the generalized contact area. The Cambrian argillaceous phyllites contain local "beds" of carbonate rich argillite (probably ankerite). This carbonate is also evident throughout much of the argillites in small squared rhombs 1 or 2 mm in diameter. Greenstone bodies with relict pillow (?) structures occur as prominent outcrops some 50 to 300 feet wide parallel to schistosity in enclosing argillites and up to 1000 feet or more long.

#### GEOCHEMISTRY

The 1983 programme completed broad scale sampling and mapping of the property. Soils, silts, and rock chips were collected along roads and east-west lines. Soil samples were collected from shallow pits dug with a hand pick or mattock to a depth of approximately 20 cm. "B" horizon soil was collected from the pit using a stainless steel

scoop and placed in an identified gusseted kraft paper sample bag. Silt samples were collected from active silts using a stainless steel scoop. Rock chip samples consisted of from 3 to 10 rock chips small enough to fit into the gusseted kraft paper sample bags used for all samples.

All samples were shipped to Chemex Labs Ltd., 212 Brooksbank Avenue, North Vancouver, B.C. for geochemical analysis. All samples were analyzed for gold, using a fire assay preconcentration with neutron activation analysis.

Results from the 1983 work together with previous work, all shown on Figure 3, indicate two large areas of anomalous gold supported by anomalous arsenic from the previous year's work. Both of these areas of anomalous gold geochemistry are partly masked by glacial tills but enough samples are anomalous to show the overall patterns. The southwestern anomalous zone in the northwestern corner of WANK #4 mineral claim is on the edge of extensive cover. The northeastern zone occurs mainly over argillaceous phyllites of the Cambrian Cariboo group near thin contact with middle Jurassic to Cretaceous volcanic sediments.

#### CONCLUSIONS AND RECOMMENDATIONS

Preliminary geochemical survey lines completed over the past two years have outlined two large areas of anomalous gold geochemistry supported by anomalous arsenic geochemistry. The northeastern zone is the largest, measuring 800 m wide by 2500 m long, and occurs over argillaceous phyllites and greenstones adjacent to younger andesitic

tuffs that are in fault contact with the phyllites. This zone is open to the northwest and possibly southeast if apparent faulting and glacial overburden are accounted for. The zone may also be wider, to the northeast, but heavy glacial overburden in this direction would preclude an easy determination of extent of anomalous geochemistry in this direction. The southwestern zone measures 600 metres by 1200 metres approximately, but is on the edge of extensive glacial drift which may be masking some and even most of the zone.

A programme of detailed geological mapping and sampling of these two zones should be undertaken prior to or perhaps coincident with the use of geophysical surveys.

Respectfully submitted,

Gordon G. Richards, M.Sc., P.Eng.

KANGAROO PROPERTY  
STATEMENT OF EXPENDITURES  
ARMADA AND MAIN GROUPS

## TIME CHARGES:

G.G. Richards, Geologist	May 17(1/2), May 31, June 1-7	8 days @ \$225	\$ 1,912.50
W.A. Howell, Geologist	May 31, June 1-7	8 days @ \$225	1,800.00
K.W.Livingstone, Geologist	June 7(1/2), 8(1/2)	1 day @ \$225	225.00

## DISBURSEMENTS

CAMP costs - domicile 14 man days @ \$45.	810.00
Hudson Building Supplies	264.86
Chemex Labs Ltd. Inv. #1692	731.50
1693	1,553.75
1694	1,733.05
Truck rental	397.23
P.W.A. Freight	41.65
Report preparation and reproduction	<u>1,500.00</u>
Total	\$ 10,969.54

Distribution:    \$ 2,000.00 apply to ARMADA Group  
                  8,400.00 apply to MAIN Group  
                  569.54 apply to K.W. LIVINGSTONE P.A.C. Account

STATEMENT OF QUALIFICATIONS

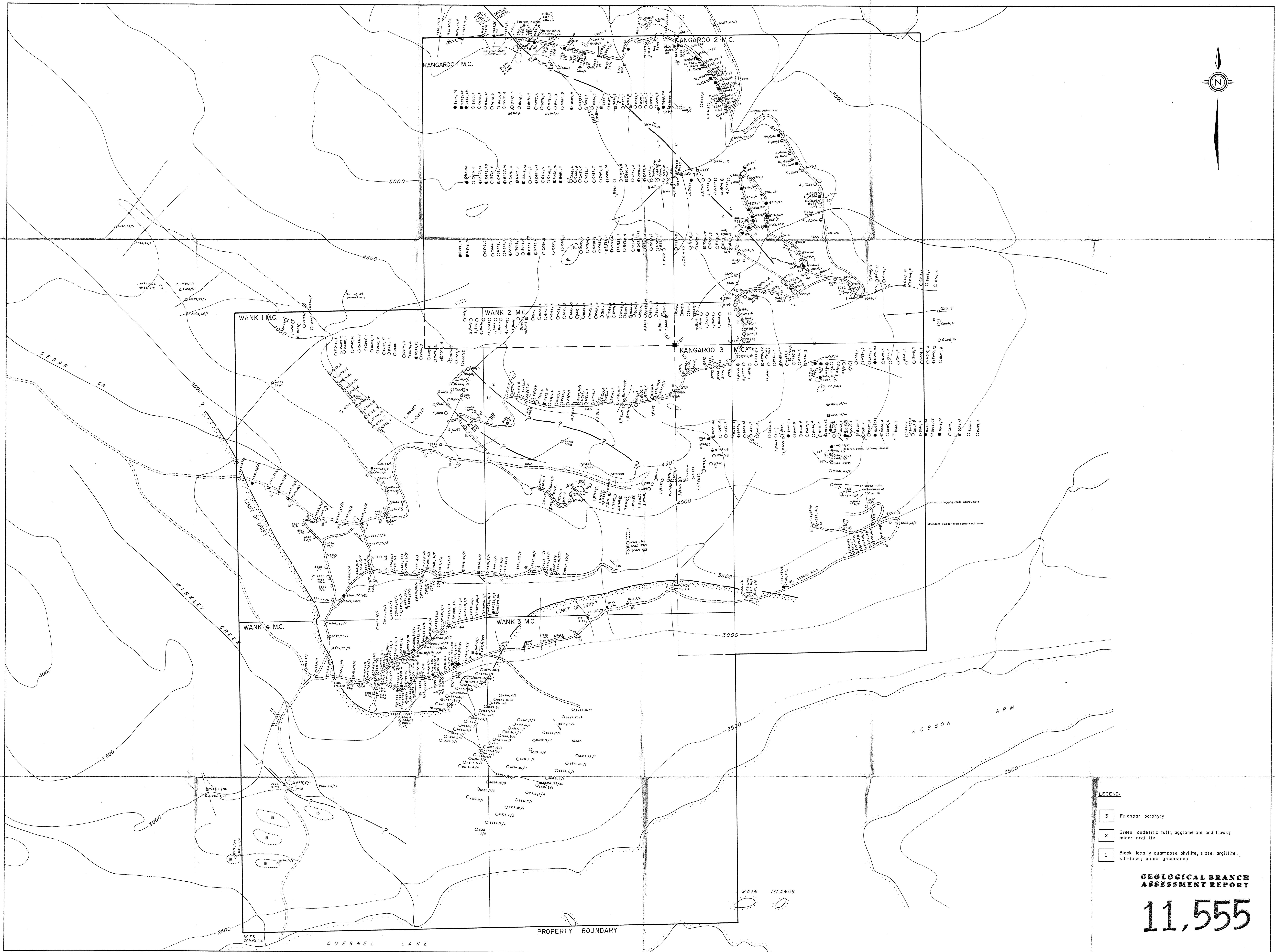
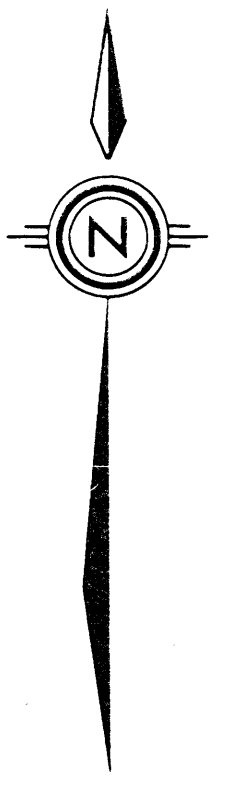
I, Gordon G. Richards, of Vancouver, British Columbia, do hereby certify that,

1. I am a Professional Engineer of the Province of British Columbia, residing at 6195 Lynas Lane, Richmond, B.C., V7C 3K8.
2. I am a graduate of the University of British Columbia, B.A.Sc., 1968, M.A.Sc.m 1974.
3. I have practised my profession as a mining exploration geologist, continuously since 1968.
4. This report is based on my personal knowledge of the district, and mapping of the geology at the property.



Gordon G. Richards, P.Eng.





- LEGEND:**
- 3 Feldspar porphyry
  - 2 Green andesitic tuff, agglomerate and flows; minor argillite
  - 1 Black locally quartzose phyllite, slate, argillite, siltstone; minor greenstone

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

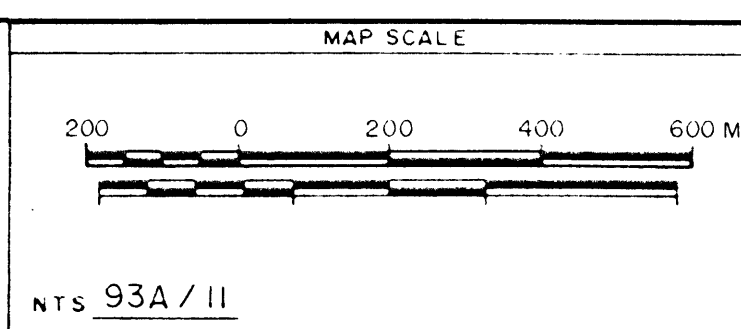
**11,555**

**GOLD CODING**  
 ○ 10 - 19 Ppb Au  
 ● > 19 Ppb Au

○ LIMIT OF OUTCROP  
 ? GEOLOGICAL CONTACT ASSUMED

**LEGEND**  
 1982 DATA  
 25 / 10 = ARSENIC (ppm), GOLD (ppb)  
 / - 10 = LESS THAN  
 / + 10 = GREATER THAN  
 1983 DATA  
 Single results - Gold (ppb)

○ SOIL SAMPLE  
 △ ROCK CHIP  
 □ SILT SAMPLE



REV.	DATE	MADE BY	DESCRIPTION
1			
2			
3			
4			
5			

**E & B Explorations Inc.**

QUESNEL REGIONAL PROJECT  
 KANGAROO PROPERTY  
**GEOLOGY & GEOCHEMISTRY**

DATE	DRAWN BY	CHECKED	APPROVED	OFFICE	DEPARTMENT	MAP INDEX NUMBER	SCALE	DRAWING NUMBER
4.1.82	JVV						1:10,000	