

**REPORT**

**ON THE**

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Gold Commissioner's Office  
VANCOUVER, B.C.

**GEOLOGICAL RECONNAISSANCE**

**OF THE COFFEE CUP CLAIMS**

**B.C.**

**OMINECA MINING DIVISION**

**BCGS MAP 103.I.088**

**Latitude 54° 49' 07" N**

**Longitude 128° 25' 38" W**

By: H.P. Salat, P.Eng  
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Calgary, Alberta T5A 1T1

Date: May 17, 2005

On behalf of Argonaut Resources Inc.  
Calgary, Alberta

GEOLOGICAL SURVEY BRANCH  
ALBERTA

27784

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## INTRODUCTION.

The present report is the result of a 2004 field visit on the COFFEE-CUP claims located near Terrace, northeastern British Columbia (Figure 1). The visit took place on September 21<sup>st</sup> and was helicopter supported due to seasonal weather conditions, time constraints and limited trail plus road access.

## PROPERTY STATUS AND TENURE

The Coffee Cup property consists of two claims with a common legal corner post and covers thirty eight units in total (Figure 2). The list of claim names and their record or tenure numbers are presented in table form below.

**Table 1: Claims**

Claim Name	Number of Units	Tenure Number	Expiry Date
COFFEE	18	409167	13-Mar-06
CUP	20	409168	13-Mar-06

## REGIONAL GEOLOGY

The regional mapping of the area by Duffell and Souther, (GSC Memoir 329, 1964), shows a complex stratigraphy of sedimentary formations, intrusive rocks and metamorphosed volcanics creating a series of embayments, roof pendants and intrusive apophyses to the main plutons. The area is located within the transition zone of two major geomorphological belts which make up the Canadian Cordillera: the Intermontane Belt to the east and the Coast Belt to the west.

The Coast Belt is essentially composed of granite intrusives constituting the very large Coast Range Batholith. At its eastern edge, it projects into the package of stratified rocks as several major apophyses and numerous small stocks.

Within the main batholith, the dominant rock types are granodiorite and quartz monzonite while the more mafic facies consisting of quartz diorite to gabbro typically compose the apophyses and satellite stocks.

Late dykes are abundant in the area and cut both bedded and intrusive rocks. Dykes and fault zones are often associated with metallic mineralization upon which they have exercised structural control and localization.

**The stratigraphy** of the thick sequence (5,000 to 6,000 metres) of layered rocks, part of the Intermontane Belt, is not fully understood. Fossil evidence indicates that the age of the rocks stretches from the Permian to the Jurassic-Cretaceous period.

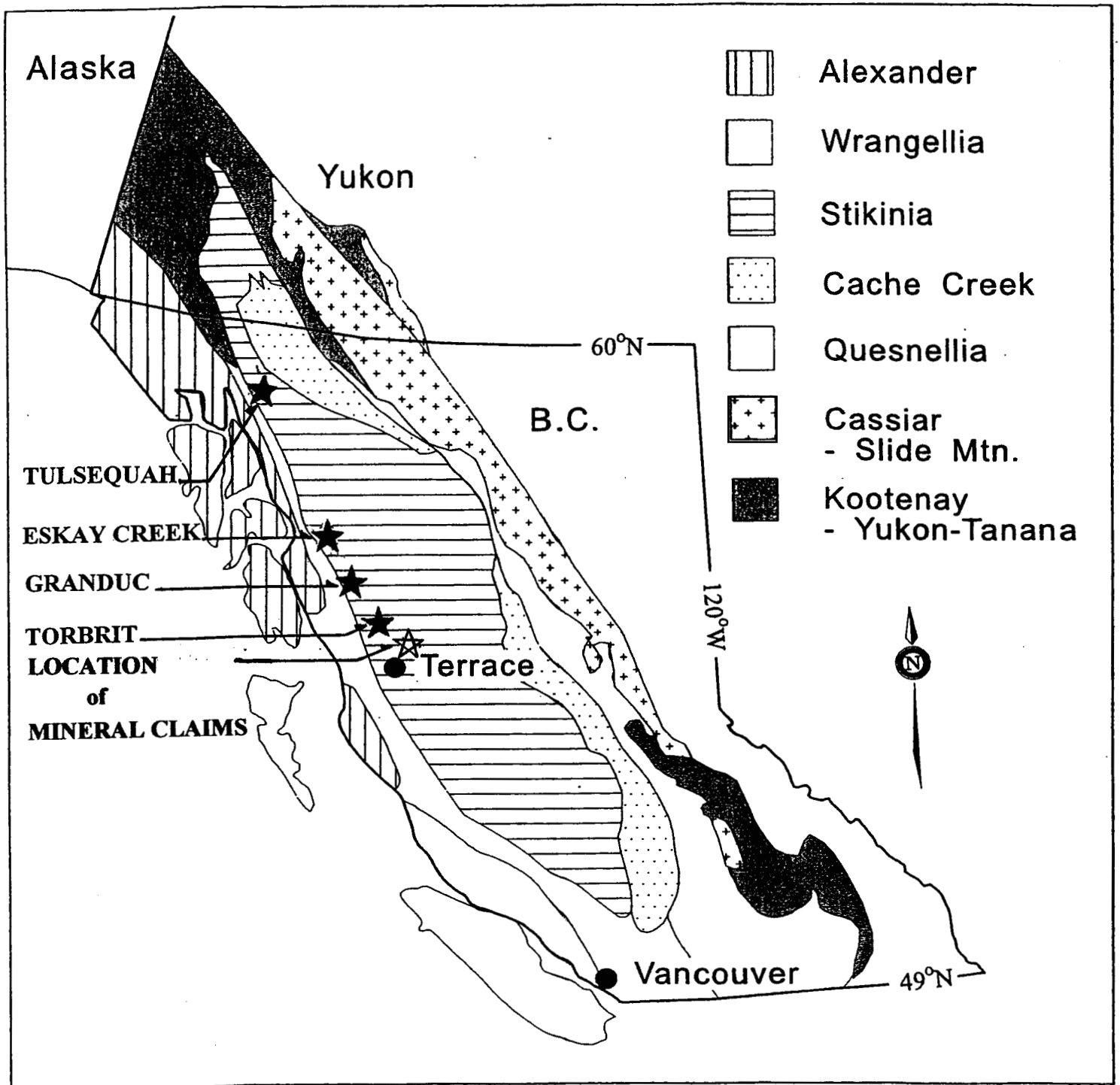
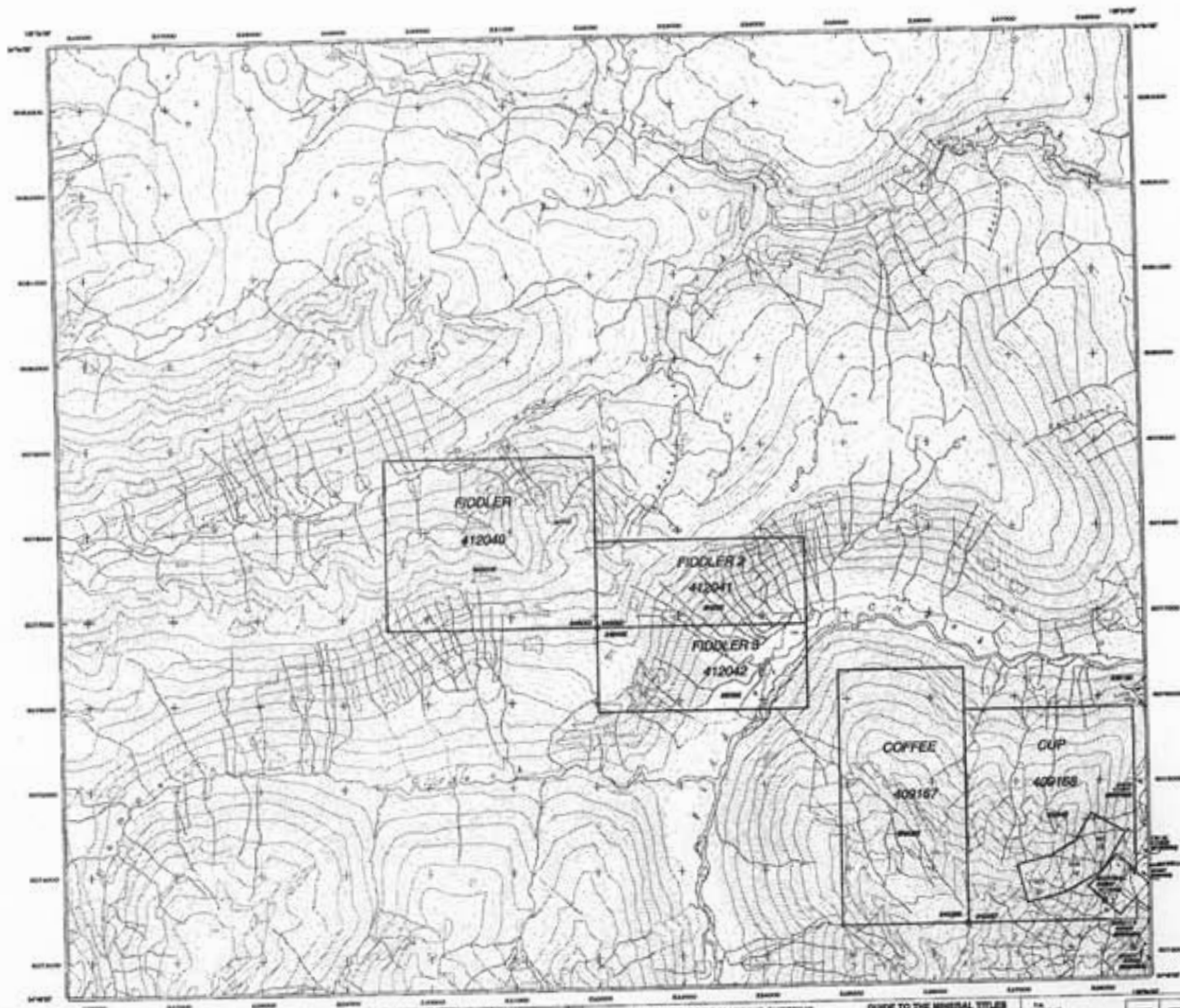


Figure 1 : Simplified map of the major tectonic assemblages of British Columbia with emphasis on the location of the main ore deposits associated with the Stikinia assemblage in relation to the mineral claims.

- ★ Eskay Creek : 1.1 MT at 0.8% Cu, 5.6% Zn, 65.5 g/T Au, 2930g/T Ag.
- ★ Granduc : 15 MT at 1.7% Cu, + minor Au, Ag.
- ★ Torbrit : 1.2 MT at 463.5 g/T Ag
- ★ Tulsequah : 9 MT at 1.3% Cu, 6.4% Zn, 2.4 g/T Au, 100 g/T Ag.



### M1031088 MINERAL LEGEND

**ADMINISTRATIVE AREAS**

- LOCAL GOVERNMENT
- PROVINCIAL GOVERNMENT
- FEDERAL GOVERNMENT

**ADMINISTRATIVE BOUNDARIES**

- LOCAL GOVERNMENT
- PROVINCIAL GOVERNMENT
- FEDERAL GOVERNMENT

**BOUNDARIES**

- MINERAL CLAIM
- INDUSTRIAL MINERAL
- INDUSTRIAL AREA
- INDUSTRIAL ZONE
- INDUSTRIAL RESERVE
- INDUSTRIAL RESERVE (EXCLUDED)
- INDUSTRIAL RESERVE (EXCLUDED)

**MINERAL TENURES**

- MINERAL CLAIM
- INDUSTRIAL MINERAL
- INDUSTRIAL AREA
- INDUSTRIAL ZONE
- INDUSTRIAL RESERVE
- INDUSTRIAL RESERVE (EXCLUDED)
- INDUSTRIAL RESERVE (EXCLUDED)

**FLUORINIC LEGEND**

- MINERAL CLAIM
- INDUSTRIAL MINERAL
- INDUSTRIAL AREA
- INDUSTRIAL ZONE
- INDUSTRIAL RESERVE
- INDUSTRIAL RESERVE (EXCLUDED)
- INDUSTRIAL RESERVE (EXCLUDED)

**DISCLAIMER**

This map is prepared and published by the British Columbia Ministry of Energy and Mines. It is not intended to be used as a legal document. The Ministry of Energy and Mines does not warrant the accuracy of the information contained herein. The user of this map assumes all responsibility for its use.

**SOURCES OF INFORMATION**

The information on this map is derived from the following sources:

- British Columbia Ministry of Energy and Mines
- British Columbia Ministry of Forests, Lands and Natural Resource Operations
- British Columbia Ministry of Environment and Heritage
- British Columbia Ministry of Transportation and Infrastructure

**NOTES FROM MINERAL LEGEND**

The legend symbols are used to identify the various mineral tenures and features shown on the map. The user should refer to the legend for a complete description of each symbol.

**MISCELLANEOUS NOTES**

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**GOLD COMMISSIONER OFFICES**

**COAST / LINDSAY**  
2000-2001  
2002-2003  
2004-2005  
2006-2007  
2008-2009  
2010-2011  
2012-2013  
2014-2015  
2016-2017  
2018-2019  
2020-2021  
2022-2023

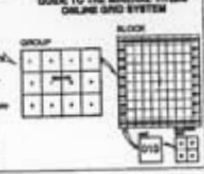
**EAST COAST**  
2000-2001  
2002-2003  
2004-2005  
2006-2007  
2008-2009  
2010-2011  
2012-2013  
2014-2015  
2016-2017  
2018-2019  
2020-2021  
2022-2023

**FRASER CANYON**  
2000-2001  
2002-2003  
2004-2005  
2006-2007  
2008-2009  
2010-2011  
2012-2013  
2014-2015  
2016-2017  
2018-2019  
2020-2021  
2022-2023

**ISLANDS**  
2000-2001  
2002-2003  
2004-2005  
2006-2007  
2008-2009  
2010-2011  
2012-2013  
2014-2015  
2016-2017  
2018-2019  
2020-2021  
2022-2023

**INTERIOR**  
2000-2001  
2002-2003  
2004-2005  
2006-2007  
2008-2009  
2010-2011  
2012-2013  
2014-2015  
2016-2017  
2018-2019  
2020-2021  
2022-2023

**WEST COAST**  
2000-2001  
2002-2003  
2004-2005  
2006-2007  
2008-2009  
2010-2011  
2012-2013  
2014-2015  
2016-2017  
2018-2019  
2020-2021  
2022-2023



**INDEX TO ADJOINING MAPS**

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**1:20 000**  
ORIGINAL PRODUCED AT 1:20 000  
LAST MAP UPDATE: 2004 DEC 08  
Version Number: 2011

**BRITISH COLUMBIA**  
MINISTRY OF ENERGY AND MINES  
MINISTRY OF SUSTAINABLE RESOURCE MANAGEMENT  
**M1031088**  
North American Datum - 1983  
UT M Coordinate System - Zone 8  
Completion Date: 2004 JUL 21

**Figure 2 : Location Map for the COFFEE + CUP Claims, OMINECA MINING DIVISION, B.C.N.T.S. 1031088.**

In general terms, the lithologies can be regrouped into three rock units from bottom to top:

- I. The Paleozoic assemblage; consisting of fossiliferous limestone, argillaceous limestone, greywacke and interlayered greenstone rocks. In the Terrace area, this package of rock is relatively minor in abundance and is found mainly on the western edges of embayments in contact with the large granitic intrusives.
- II. The Triassic-Jurassic Hazelton Group; a thick sequence of rocks that constitute one of the main building blocks of the Intermontane Belt, and overlie the Paleozoic assemblage. The Hazelton Group is composed of a very heterogeneous series of pyroclastic andesite basalts with minor interbeds of argillite, greywacke, rhyolite and dacite.

The base of the Hazelton Group is composed of a conglomerate bed with abundant limestone boulders overlain in turn by beds of greywacke and volcanic sandstone. The basal beds are representative of a commonly identifiable unconformity above the Paleozoic beds. Overlying the unconformity, the Hazelton Group can be divided into a lower unit; consisting of coarse andesite breccia, green andesite, greywacke plus argillite, and an upper unit of; red, green plus purple porphyritic andesite flows with minor basalt, rhyolite and dacite.

- III. The Upper Jurassic to Lower Cretaceous assemblage or Bowser Group of rocks are apparent at a marked angular discordance. The stratigraphy of this assemblage is composed of a series of marine and continental sedimentary rocks. These rocks consist mainly of conglomerate, sandstone, greywacke and shale with coal beds. The Bowser Group is most prevalent in the Bowser Basin of the Stikine area to the north.

**Regional metamorphism** is of the lowest grade. Chlorite, muscovite and minor epidote are present as secondary minerals in volcanic and sedimentary rocks but the texture and mineral composition of the original rocks have not been greatly altered. Contact metamorphism, on the other hand, has been highly altered and subsequently varied.

Adjacent to the batholith, the rocks are commonly of the albite – epidote – amphibolite facies. Some rocks may show no megascopic alteration, whereas others fall within the highest grades of contact and dynamic metamorphism. Crystalline schists and gneisses of the latter type are more commonly developed along contacts with the main batholith than along contacts with apophyses and stocks. (GSC Memoir 329, 1964, p. 14).

**Structural relationships** are consistent throughout the rock sequences. The bed layers dip at 20° to 80° and the bedding strikes remain unchanged when in contact with batholithic rocks. General mapping of volcanic and sedimentary formations reveal broad anticlines and synclines with their long axis conformable to batholithic contacts or paralleling the long axis of apophyses. The metamorphic grade of the formations confirm the lack of dynamic metamorphism on a regional scale and that deformation is related to the tectonic emplacement of batholithic rocks. The stratigraphy of the late Jurassic-Cretaceous Bowser Group is commonly folded into gently undulating anticlines and synclines with average dips from 30 to 35° except when in contact with the coastal intrusives. Structural tightening is related to burial. Brittle faulting is common within the rocks and frequently associated with intrusive dykes and sills. The dykes plus sills have dislocated and thrown into tight local folds adjacent sedimentary and volcanic rocks often with contact metamorphism. Little evidence of granitization has been observed in the area.

TABLE 2 : FORMATIONS

Era	Period or Epoch	Formation	Lithology
Cenozoic			Sand, gravel, clay, silt
<b>Unconformity</b>			
		Dykes	Porphyritic, aplite, lamprophyre
		Coast Intrusions	Mainly biotite granodiorite and quartz diorite, diorite Outlying stocks of pyroxene quartz diorite and gabbro
Mesozoic or Cenozoic	Cretaceous or later	Coast Intrusions	
<b>Intrusive Contact</b>			
Mesozoic	Upper Jurassic and Cretaceous	Bowser Group	Fossiliferous marine and terrestrial conglomerate, greywacke, shale and coal.
	<b>Unconformity</b>		
	Jurassic	Hazelton Group	Porphyritic and amygdaloidal andesite flows; minor basalt, dacite, rhyolite
	Triassic?		Andesite breccia, tuff, greywacke, argillite Limestone-boulder conglomerate, greywacke, shale
	<b>Unconformity</b>		
Palaeozoic	Carboniferous and permian		Fossiliferous white limestone, argillaceous grey limestone, shale; greenstone

(after Duffell and Souther, 1964)



## **RECONNAISSANCE WORK AND EVALUATION OF MINERAL SHOWINGS**

The COFFEE and CUP claims were staked in order to cover the extension of the Doreen Gold mine vein system and also to include the Patmore showings.

Due to time constraints, unseasonably adverse weather in the Terrace area for the time of the year, and difficult access, only a brief examination of the property was possible.

### **1. Location and Access**

The claims are located on the northern side of Knauss Mountain and on the south side of Fiddler Creek. Fiddler Creek flows eastward to empty into the Skeena River about 2 kilometres north of the Canadian National Railway station at Doreen and 30 kilometres north of the city of Terrace. Access to the claim area is restricted to helicopter transportation; there is no road or trail in the area.

### **2. Past Work and Historical Reporting On Mineralization**

The most prominent mineralization known in the area is that of the Doreen Mine. The mine is the product of a single vein system that parallels and is bound by the bedding contacts of Bowser Group shale beds. A number of drifts and raises over an area of 70 metres by 80 metres were tunneled with limited stope development. The vein is composed of quartz that varies in thickness from a few centimetres at the end of the adit on the uppermost level to 1.5 metres near the main adit portal. The mine workings show the vein to be lens shaped and thickest adjacent of a crosscutting quartz diorite dyke near the mine entrance. The vein was initially believed terminated at the dyke, however, prospecting in 1915, discovered a vein 122 metres north and 46 metres lower that contained minerals consistent with those found in the main vein (Annual Report of the Minister of Mines, 1915, p K140; GSC Memoir 212).

Metallic minerals contained in the main vein included chalcopyrite, covellite, galena, pyrite, sphalertie, tetrahedrite and arsenopyrite (GSC Memoir, 329):

- in 1924, 80 tons (73 tonnes) of ore was shipped that assayed 57.3 g/t Au, 206 g/t Ag, 6.2% Pb, 5.8% Zn and 1.3% Cu. In 1926 100 tons (90 tonnes) of ore was shipped (GSC Memoir 329).
- in 1952, 525 tons (477 tonnes) of ore was milled that assayed 6.8 g/t Au, 17 g/t Ag and 0.6% Pb (GSC Memoir 329)

A similar vein with a width of 0.2 to 0.3 metres was discovered 21 metres stratigraphically above the main vein.

The Doreen Gold Mine is located on the most northern of 3 contiguous crown grants. The mine is not on the present claim property, however, the vein strike and down dip extension appear to place the mineralized vein on the currently staked ground.

Very interesting showings near the Doreen Mine have been reported and is covered by the existing COFFEE and CUP claims. The showing, known as the Patmore showing consist of numerous mineralized narrow quartz veinings 0.15 metres wide and 30 metres in length crosscut a large quartz diorite sill. The sill sub-parallel, with a stratabound character, the argillite (shale) beds of the Bowser Group and is traced by flanking trenches over a minimum length of 366 metres. The sill is brown stained due to the weathering of small abundances of pyrite and contains a gross quartz vein content of 10%.

Two localities have been stripped and trenched along the sill. The main showing occurs at 778 metres elevation and is an area trenched and stripped over 12 metres by 30 metres. The quartz stringers exposed are well mineralized with galena, sphalerite and lesser amounts of pyrite and chalcopyrite.

- a representative sample of the mineralized vein quartz assayed 4.1 g/t Au, 78 g/t Ag, 1% Pb and 1% Zn.

A second location has been trenched that is 15 metres by 18 metres in area some 366 metres to the southwest at the same approximate elevation. The intervening area between the two main showings is talus covered. The mineralization is the same as that found at the main showing with numerous narrow well mineralized quartz veins crosscutting an apparent quartz diorite sill. Additional small mineralized exposures were observed 60 metres down the mountain slope to the north of the second showing area. An adit was tunneled to the south at an elevation of 762 metres along the sill for 11 metres until the footwall argillite bed was intersected .

- a 0.2 metre channel sample in the adit across a narrow quartz vein 6 metres from the adit entrance assayed 4.8 g/t Au, 92 g/t Ag and 2.9% b (GSC Memoir 212).

### **3. Present Work**

The claim area covers the steep slopes of Knauss Mountain , well below the elevation at which the alpine climatic zone restricts vegetation to low shrubs and grass and therefore allows good rock exposures. On the slopes dense stands of timber and thick underbrush create a uniform canopy and a blanket of deep forest soils. In such a setting, rock formations are only exposed on the banks of a few strongly eroding creeks or torrents and are on occasion in breaks in slope near the base of the mountain along Fiddler Creek.

Two helicopter supported traverses were attempted over steep northern creeks which display a repetitive alternation of metre thick grey massive quartzite, siltstone and thinner intercalations of argillites. The alternation can be observed over four to five hundred metres, the layering is striking NE to SW and gently dipping at less than 20 degrees to the SE.

The repetitive clastic sequence is typical of a turbiditic environment where only the top of A plus B turbidite members are followed by laterally more continuous C, D and E (lutites ) member of submarine fans. Lack of terrigenous sediments (fluvial sediments, aerial exposures or coaly beds) suggests that the whole sequence belongs to the lower Bowser Basin assemblage.

## **CONCLUSION AND RECOMMENDATIONS**

Accessibility to the COFFEE-CUP area is a major issue to carrying exploration at the early phase. Lack of a road or trail with densely timbered and steep slopes necessitates a heavy logistical approach and investment.

A deep water turbiditic geological environment which was observed on the property, is typical of active continental margins adjacent to orogenic belts. Such context elsewhere indicates zones of strong tectonic activity and is expressed by large and extensive structures such as fault zones (normal or reverse), wrench fault zones or extensive shear zones. In these types of crustal breaks, it is not uncommon to find large mineralized vein structures which are the surface expression of channel-ways for mineralizing fluids with a preference for precious metals (gold and silver). The Doreen mine is a good example of such a deposit..

Moreover, the stratabound control to the mineralized quartz veins at the Doreen Mine and the Patmore showings give great promise for the delineation of large economic tonnage. The presence of bonanza precious metal grades in the mine and the expansive character of a metallically mineralized, highly fractured and veined, almost brecciated quartz diorite sill gives great economic promise to the property

Work recommendations imply development of road or trail access to the property, followed by thorough mapping, structural mapping and a prospecting program. Owing to the good forest soil development, a soil geochemistry program should reveal dispersion of sub-surface mineralization and could be carried out over a good grid system. The structural mapping can be followed up with an exploratory phase of drilling on defined mineral targets.

WORK PROGRAM:

LOGISTICS

Line cutting	\$ 60,000
Base camp and supplies	\$ 25,000
Helicopter support	\$ 30,000
Mob & Demob	\$ 10,000

FIELD WORK

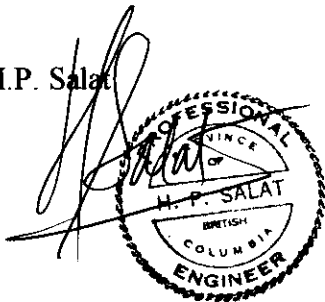
Mapping & prospecting phases	\$ 25,000
Soil geochemistry (sampling)	\$ 20,000
Lab work and analysis	\$ 50,000
Reporting	\$ 10,000

DRILLING PHASE \$ 150,000

**TOTAL \$380,000**

Respectfully submitted.

H.P. Salat



### STATEMENT OF 2004 EXPENDITURES

#### Field work

Travel time 1 day X 2 senior geologists	\$1,200
Field time 1 days X 2 senior geologists	\$1,200
Lodging-food, 2 days X 2 people X\$75/man/day	\$ 300
Helicopter Time	\$ 782
Truck Rental (1/4 of invoice)	\$ 413

#### Reporting

Research & interpretation 1 days at \$600 day	\$ 600
Reproduction & printing	\$ 200
Sundries	\$ 50

Administration and overheads at 10% \$ 475

**TOTAL** **\$5,220**

## REFERENCES

- Duffell, S. and Souther, J.G. – 1964. Geology of Terrace Area, British Columbia (103 I E ½); Geological Survey of Canada, Mem. 329.
- Kindle, E.D. – 1937. Mineral Resources of Terrace Area, Coast District, British Columbia; Geological Survey of Canada, Mem. 205.
- Kindle, E.D. – 1937. Mineral Resources, Usk to Cedarvale, Terrace Area, Coast District, British Columbia; Geological Survey of Canada, Mem. 212.

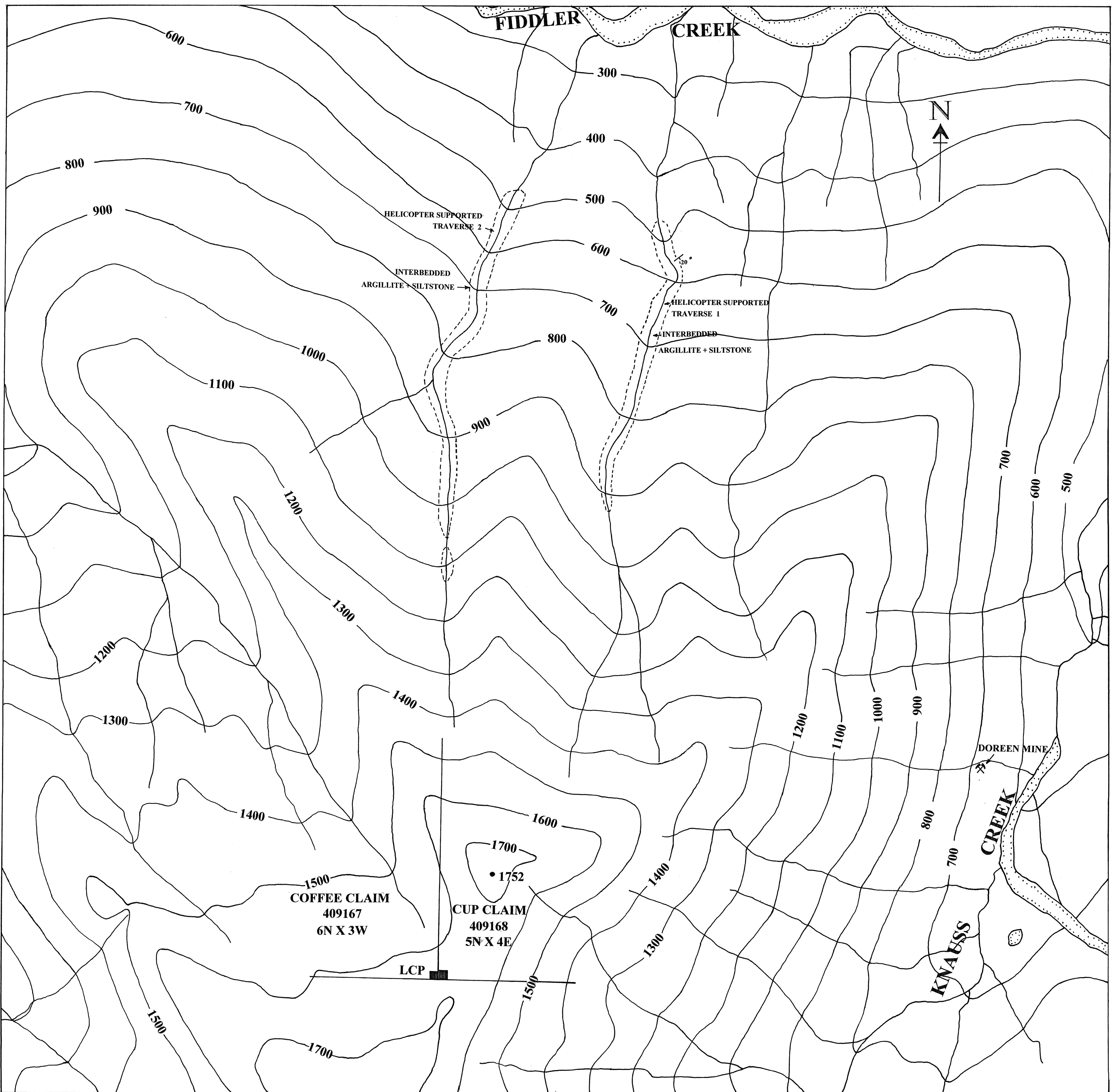
## CERTIFICATE

1. HUGHES SALAT, of the city of Calgary, certify that:
  - 1) My present address is 5904 Dalhousie Drive NW, Calgary, Alberta, T3A 1T1 and my occupation is that of a consulting geologist.
  - 2) I am a holder of the French Baccalauréat in Mathematics, Physics, Latin and Greek.
  - 3) After three years of general sciences and successfully being admitted to the Ecole nationale Supérieure de Géologie Appliquée de Nancy, I graduated from that school with a degree in Geological Engineering and with the diploma of License-ès-Sciences from the Faculty of Earth Sciences, University of Nancy (France). I have also obtained an M.Sc. equivalence and completed all credits and research requirements for a degree of Ph.D. at the University of Southern California in Los Angeles (unwritten thesis due to military recall).
  - 4) I have been practicing continuously my profession of geologist since 1968 in Canada and Europe in mineral exploration, first with Aquitaine Company of Canada then with SNEAP (Elf-Aquitaine). Concomitantly, from 1983 to 1987, I have also worked for the latter (Elf-Aquitaine, now Total) as petroleum geologist on international projects dealing with Central Africa, Indonesia and South America.  
Since 1988, I have operated as an independent consultant in mineral exploration from the above mentioned address.
  - 5) I am a fellow member of the Geological Association of Canada, of the Canadian Institute of Mining and Metallurgy, of the Canadian Society of Petroleum geologists, of the Association of Professional Engineers, geologists and geophysicists of the Province of Alberta and the Association of professional Engineers and Scientists of the Province of British Columbia.
  - 6) This report is based on my personal knowledge of the area, compilation of available technical data and field work on the concerned property from September 19 to September 21, 2004.
  - 7) I have no interest, directly or indirectly, in the mineral claims of ARGONAUT RESOURCES INC. nor do I expect to receive any in the future.

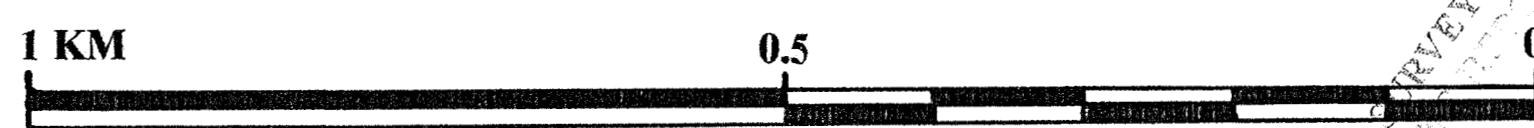
I, Hughes Salat, author of the present report CONSENT to the use of my report or any portion thereof, for the purpose of raising funds, filing of offering memorandum or prospectus with the intention to raise capital for carrying out exploration work on the mineral property, subject of this report.

This 15th day of May, 2005

Hughes P. Salat, P.Eng.

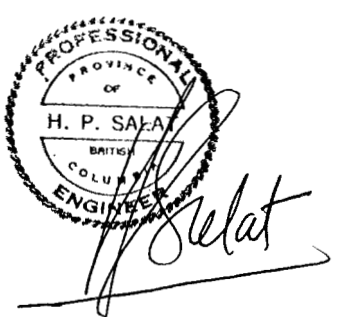


**MAP 1. FIDDLER CREEK**  
**OMINECA MINING DIVISION**  
**BCGS MAP 103.I.088**  
**SCALE 1 : 5000**



**LEGEND**

- CONTOUR (Metres)
- CREEK
- LAKE
- CLAIM NAME
- TENURE NUMBER
- CLAIM SIZE (Units)
- MAPPED GEOLOGY
- LITHOLOGY
- STRIKE + DIP
- MINE PORTAL



GEOLOGY BY: HUGHES SALAT  
 DRAWN BY: R. COOK

To Accompany the "Report On The Geological Reconnaissance of the Coffee & Cup Claims" dated May 17, 2005 by H.P.SALAT

MAY 18, 2005

GEOLOGICAL SURVEY BRANCH  
 27-784