FLE NO:
Cogema Canada Ltd.

## BRALORNE PROJECT 1992 Pilot Property British Columbia



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## SUMMARY

Work performed on the Pilot property in 1992 consisted of detailed prospecting, lithogeochemistry, and diamond core drilling, concentrating on the Walker Ridge area. The presence of disseminated and fracture controlled $\mathrm{Au}-\mathrm{Cu}$ mineralisation associated with pyrite, chalcopyrite and bornite in the granodiorite was confirmed.

The best intersections are
-10 m at $4 \mathrm{~g} / \mathrm{t} \mathrm{Au}, 0.12 \% \mathrm{Cu}$ in surface chip samples
-10.5 m at $1 \mathrm{~g} / \mathrm{t} \mathrm{Au}, 0.16 \% \mathrm{Cu}$ in drill core

Grab samples reached over $100 \mathrm{~g} / \mathrm{t} \mathrm{Au}$ and over $3 \% \mathrm{Cu}$ in three locations.

Results to date show that the Pilot property has the potential to host bulk-tonnage porphyry-style $\mathrm{Au}-\mathrm{Cu}$ mineralisation and further work is recommended.

This mineralisation has now been observed over an area of about 700 m by 400 m along the contact of the granodiorite with Bridge River cherts.

## INTRODUCTION

The Bridge River Camp is the largest past producer of gold in British Columbia with a total production from 1900 to 1978 of 130 t of gold, $99 \%$ of which came from the Bralorne-Pioneer deposit. The area is easily accessible and has good infrastructure (Figure 1).

Considering the past production of the Bralorne-Pioneer mine and the similarity of this deposit with those found in the Archean Superior Province of the Canadian Shield or in the Mother Lode Belt in California, it appears that the Bridge River Camp offers a good potential for mesothermal gold vein deposits.

In October 1990, Cogema acquired from X-Cal Resources Ltd. five properties in this camp: Anderson Lake, Pilot, Truck-Paymaster, Waterloo, Tyax.

In 1991, Cogema carried out an exploration programme on all five properties (Figure 2). In 1992, it returned four properties to X-Cal Resources Ltd. and continued its exploration programme on the Pilot property where positive results had been obtained.

## LEGAL DESCRIPTION OF THE PROPERTY

The Pilot property consists of 27 contiguous claims ( 99 units, 16.5 square kilometres). Except for Pilot Ext 4 and 5, they were acquired by COGEMA Canada Ltd. from X-Cal Resources Ltd. in 1990. Pilot Ext 4 and 5 were located by Cogema early in 1991 to cover the probable extension of the Bralorne lineaments. The claims are shown on Figure 3 and listed in Table 1.




## Table 1

## List of Claims

| Claim Name | Record No. |  | Lot <br> No. | No. of Units | Loc. <br> Year | Expiry Date |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Old | New |  |  |  |  |
| Pilot: |  |  |  |  |  |  |
| Pilot Extension | 2224 | 228457 |  | 20 | 1982 | 13 Dec. 1993 |
| Pilot Extension \#2 | 2244 | 228468 |  | 20 | 1982 | 29 Dec. 1992 |
| Pilot Extension \#3 | 2252 | 228470 |  | 16 | 1983 | 10 Jan. 1994 |
| Pilot A | 2568 | 228540 |  | 1 | 1983 | 19 Aug. 1994 |
| Pilot Ext 4 | 4595 | 229418 |  | 16 | 1991 | 06 Mar. 1994 |
| Pilot Ext 5 | 4596 | 229419 |  | 5 | 1991 | 06 Mar. 1994 |
| Gold Pass \#1 | 2080 | 228423 | 6999 | 1 | 1982 | 23 Jul. 1994 |
| Gold Pass \#2 | 2083 | 228426 | 7000 | 1 | 1982 | 23 Jul. 1994 |
| Gold Pass \#3 | 2793 | 228588 | 7001 | 1 | 1984 | 07 Feb. 1994 |
| Gold Pass \#4 | 2794 | 228589 | 7002 | 1 | 1984 | 07 Feb. 1994 |
| Gold Pass \#5 | 2726 | 228557 | 7003 | 1 | 1984 | 18 Jan. 1994 |
| Gold Pass \#6 | 2730 | 228561 | 7004 | 1 | 1984 | 18 Jan. 1994 |
| Gold Pass \#7 | 2727 | 228558 | 7005 | 1 | 1984 | 18 Jan. 1994 |
| Gold Pass \#8 | 2728 | 228559 | 7006 | 1 | 1984 | 18 Jan. 1994 |
| Gold Pass \#9 | 2729 | 228560 | 7007 | 1 | 1984 | 18 Jan. 1994 |
| GLG \#1 | 2084 | 228427 | 1322 | , | 1982 | 23 Jul. 1994 |
| GLG \#2 | 2085 | 228428 | 1323 | 1 | 1982 | 23 Jul. 1994 |
| GLG \#3 | 2082 | 228425 | 5688 | 1 | 1982 | 23 Jul. 1994 |
| GLG \#4 | 2086 | 228429 | 1324 | 1 | 1982 | 23 Jul. 1994 |
| GLG \#5 | 2087 | 228430 | 1325 | 1 | 1982 | 23 Jul. 1994 |
| GLG \#7 | 2088 | 228431 | 1326 | , | 1982 | 23 Jul. 1993 |
| GLG \#8 | 2089 | 228432 | 1327 | 1 | 1982 | 23 Jul. 1993 |
| GLG \#9 | 2090 | 228433 | 1328 | 1 | 1982 | 23 Jul. 1993 |
| GLG | 2230 | 228463 | 1340 | 1 | 1982 | 17 Nov. 1993 |
| Ypres \#9 | 2905 | 228594 | 5686 | 1 | 1984 | 18 Jun. 1994 |
| Ember | 2906 | 228595 | 5687 | 1 | 1984 | 18 Jun. 1994 |
| Ypres Fraction | 2081 | 228424 | 5689 | 1 | 1982 | 23 Jul. 1994 |

## LOCATION, ACCESS, AND PHYSIOGRAPHY

The Pilot mineral claim is located in the Bridge River Mining Camp at latitude $50^{\circ} 53^{\prime} \mathrm{N}$, longitude $122^{\circ} 55^{\prime} \mathrm{W}$ in NTS Map Area $92 \mathrm{~J} / 15 \mathrm{~W}$. The centre of the property lies 3.5 kilometres northwest of Gun Lake.

The southeast portion of the claim is accessible by the Gun Lake Road which goes southwest around Mount Zola then north along the northwest shore of Gun Lake approximately 10.5 kilometres from Goldbridge, B.C. The northeast zone is accessible by the Slim Creek logging road which branches north from the Carpenter Lake Road approximately 1 kilometre west of the Gun Creek Bridge. These two areas are connected by a cat road built by X-Cal in 1985.

Two major drainages, Walker Creek and Pilot Creek, form large Cirques on the western half of the Pilot property. At elevations up to 2,400 metres, this area is characterized by minimum alpine vegetation on precipitous rock exposures and talus slopes.

The eastern half of the property is mainly forest covered with a minimum elevation of 1,150 metres. Outcrops are restricted to the creek levels and occur sporadically in tree cover.

## EXPLORATION HISTORY

Exploration in the area began in 1917 when the Ypres group of 18 claims were staked by Messrs. O. Fergusson and C. Walker. In 1931, the property was acquired by Gun Lake Gold Mines Ltd., transferred to Cariboo-Bridge River Gold Properties in 1933 and then acquired by Pilot Gold Mines Ltd., Vancouver, B.C. in 1934. This company developed the extensive underground workings known as the Pilot Mine.

The workings involve drifts, crosscuts, and one shallow winze totalling 1,500 metres of underground workings on a series of quartz veins occurring in a north trending shear zone. Assays up to $11 \mathrm{~g} / \mathrm{t}$ have been reported from this underground development programme (Cairnes, 1937).

Recent work on the Pilot claim group consists of:

1983

1985

1986 - diamond drilling: two holes of 137 and 152 metres along the "Pilot Shear Zone"

1991

- geological mapping and prospecting at $1: 2,500$ in the vicinity of the Pilot Mine workings ( 53 rock samples analyzed) and at $1: 12,500$ by traverses, mainly on the ridge top in the northwestern part of the property ( 52 rock samples and 15 heavy mineral stream sediments analyzed)
- grid in the southeast part of the property: 200 -metre line spacing, 25 -metre stations, about 20 line kilometres
- soil sampling at 25 -metre spacing
- VLF (EM 16) survey
- geologic mapping of the grid area at $1: 5,000$, locally $1: 2,000$
- 12 kilometres of access roads
- 3,700 metres of trenching; 522 rock samples
- geological mapping and prospecting at $1: 10,000$ scale of the whole property
- grid ( 200 m lines) in the eastern part of the property, mainly on claim Pilot Ext. 4
- Mag-VLF survey ( 12.5 m stations)
- soil geochemistry ( 50 m stations)
- moss-mat stream geochemistry


## REGIONAL GEOLOGY

A good summary of the regional geology is given in Leitch (1990) and is reproduced in part hereunder.

The latest published geological map of the area (92J, 1:250,000) based on field mapping is by Woodsworth (1977). Table 2 gives the principal units based on recent mapping by Church (1987), Church et al. (1988), compilation of available data, and recent age dating.

The principal stratigraphic assemblages of the Bralorne area have traditionally been called the Bridge River (Fergusson) and Cadwallader groups, although the former should properly be called the Bridge River Complex. The Bridge River Complex contains the oldest known rocks of the map-area and has generally been assigned a Permo-Triassic age on the basis of its similar lithology to the Cache Creek Group and correlation to the Hozameen Group. The Permian age is supported by recent dating of the Bralorne diorite ( $284 \pm 20 \mathrm{Ma}$ by $\mathrm{K}-\mathrm{Ar}$ on hornblende and $270 \pm 5 \mathrm{Ma}$ by U-Pb on zircons) which appears to intrude the Bridge River Complex. However, fossil evidence suggests a Triassic to Jurassic age.

The Bridge River Complex consists of great thicknesses ( 1000 m or more) of ribbon chert and argillite with very minor discontinuous limestone lenses, and large volumes of basalt, some pillowed.

The Cadwallader Group, previously considered to be Upper Triassic (pre-Norian, or pre-225 Ma) age on the basis of conodonts recovered from limestone of the upper sedimentary part of the section, is also apparently intruded by the Bralorne diorite and thus may be at least partly Permian in age. Traditionally, the Cadwallader Group, as defined originally in the Bralorne area, has been subdivided into three formations: the lowermost sedimentary Noel Formation, the Pioneer Formation greenstones, and the upper Hurley Formation sediments. However, the distinction between the two sedimentary formations is often difficult to make and the

Cadwallader may be best divided into a lower volcanic unit (Pioneer Formation) and overlying sedimentary package (Hurley Formation). The contact is generally considered to be conformable. The Pioneer Formation has commonly been called "greenstone", but abundant volcanic textures are preserved in less altered areas within the Bralorne block. On the basis of their uniform colour index and chemical analyses, the rocks appear to be basalts and basaltic andesites.

Although the contact with the overlying sedimentary package was not mapped in detail, in the Bralorne block the volcanics seem to grade upward into finely interbedded green volcanic wackes and dark argillites of the Hurley Formation. Elsewhere a boulder and pebble conglomerate, sometimes containing limestone olistoliths, is often found at the base of the Hurley where it rests conformably on the Pioneer volcanics.

Triassic to Lower Jurassic sediments of the Tyaughton, Relay Mountain, and Taylor Creek Groups and Upper Jurassic to Tertiary volcanics and sediments occur mainly to the north of Carpenter Lake, outside of the main area of interest, but small patches of Tertiary volcanics occur along the north-west shore of Anderson Lake.

A recent volcanic ash deposit ( $2400 y$ B.P.) covers much of the area and may reach 1.5 metres thick; it is thinner or absent on steep slopes.

Igneous rocks within the Bralorne block include Upper Paleozoic ultramafics and Bralorne intrusives, Mesozoic Coast Plutonic rocks. Tertiary Bendor intrusives, and dykes of CretaceousTertiary age. Ultramafic rocks are common in the Bridge River camp, forming narrow serpentinized bodies that were probably emplaced as thrust slices of oceanic, upper mantle material. With the pillow basalts and radiolarian ribboned cherts of the Bridge River Complex, they form the trinity of a typical ophiolite package. The Shulaps ultramafic complex, which lies 30 km to the northeast of Bralorne, is a much larger mass but may be of similar origin. The ultramafics in the Bralorne area range from dunite to pyroxenite, but peridotites are most common. They are usually partly to completely serpentinized, or altered to talc-antigorite-
tremolite-carbonate. In the Bralorne mine area they are intruded by the diorite and so must be Permian or older.

The Bralorne intrusive suite includes the so-called "augite diorite" and "soda granite", which commonly occur together. Usually the contact between the two is highly complex, forming such an intimate mixture that it may be properly termed a variety of migmatite called agmatite. Although their isotopic dates are indistinguishable ( $270 \pm 5 \mathrm{Ma}$ by $\mathrm{U}-\mathrm{Pb}$ on zircons), sharp contact relations and chill margins near Goldbridge demonstrate that the soda granite is the younger phase. These intrusives are exposed at intervals over a 40 km strike length in a northwest trending belt parallel to and often confined by the ultramafic rocks. This belt stretches from Anderson Lake across the Bridge River valley to the lower reaches of Gun Creek.

Several workers in the Bralorne area have remarked on the unusual contact relationships of the diorite with the Pioneer volcanics. The diorite is not chilled against the volcanics, implying intrusion before significant cooling of the volcanic pile. These relations suggest that the Pioneer volcanics may be simply an extrusive expression of contemporaneous dioritic intrusions.

There are a large number of minor intrusives throughout the Bridge River camp, which are mainly dykes of various ages. However, in the light of recent mapping and isotopic dating in the Bralorne area, it is now clear that one group of dykes is early Late Cretaceous in age. These dykes are closely associated with mineralisation at Bralorne, and have traditionally been called "albitite". Dates obtained range from $91.4 \pm 1.4 \mathrm{Ma}$ by U-Pb on zircons from the highly altered, and therefore pre-mineral albitite dykes, to $85.7 \pm 3 \mathrm{Ma}$ by $\mathrm{K}-\mathrm{Ar}$ on fresh hornblende in a late intra- to post-mineral green hornblende porphyry dyke. Other dykes, locally called feldspar porphyries, are present at the Minto and Congress properties. They give Early Tertiary wholerock $\mathrm{K}-\mathrm{Ar}$ ages of 67 to $69 \pm 2 \mathrm{Ma}$, approximately in the middle of the range for Coast Plutonic activity. An Eocene magmatic event is also evident from lamprophyre dykes that cross-cut mineralized veins at Bralorne and are $43.5 \pm 1.5 \mathrm{Ma}$ by $\mathrm{K}-\mathrm{Ar}$ on biotite, because this coincides with similar dates of about 45 Ma on the Rexmount porphyry, the Beece Creek and Lorna Lake
plutons, and dates as young as 42 Ma for plutons south of the Bendor pluton.

The eastern boundary of the Coast Plutonic Complex granitic rocks lies only 2 km to 5 km west of the Bralorne deposit. The age range for these intrusions spans the interval from early Late Cretaceous ( 80 Ma ) to Lower Tertiary ( 59 Ma ), with the youngest ages coming from isolated stocks such as the Bendor pluton, which occur as a swarm parallel to the margin of the Coast Plutonic Complex, some 2 km to 3 km to the east of Bralorne.

Many vein gold deposits of the Archean Superior Province in the Canadian Shield are found within a mafic volcano - clastic sedimentary - ultramafic rock assemblage, thought to have formed mainly on a oceanic, accreting plate margin. A similar setting is found in the Bridge River camp, where two main lithologic assemblages can be distinguished: one dominantly oceanic and the other dominantly island arc. The former is represented by the Permian to Jurassic Bridge River Complex which comprises basalts and associated clastic sedimentary rocks with thick accumulations of ribbon chert, and minor limestone. Alpine-type ultramafic rocks in lensoid to very elongated bodies are spatially associated with the stratified rocks and are thought to form part of the assemblage. The ultramafic rocks may mark the sites of major crustal shortening that were later focuses for major transcurrent movements. Such major crustal structures are also associated with many of the large mining camps of the Superior Province or the Yilgarn Block in Australia.

The island arc assemblage, represented by the Cadwallader Group of ?Permo-Triassic age, is composed of a basaltic andesite pile with minor felsic volcanics and an overlying volcaniclastic sedimentary sequence, again with minor limestone.

The Bridge River and Cadwallader terranes containing these two assemblages form small lozenge-like fault-bounded slices sutured between the Insular super-terrane on the west and the Intermontane super-terrane on the east.

The two major faults closely bounding the major ore-producing Bralorne-Pioneer block are marked in large part along their length by narrow sinuous serpentine bodies. These could represent the sites of former major crustal shortening that have been reactivated by later transcurrent faulting, so the emplacement of the ultramafics could have been as solid bodies. Movement on the faults may have been of the same sense as the Fraser fault system, i.e. right lateral.

Although the majority of the Bridge River Camp production comes from the Bralorne-Pioneer mine, there is a host of other prospects and occurrences which can be classified into four main groups:

- mesothermal ribboned Au quartz-veins: Bralorne-Pioneer
- transitional to epithermal $\mathrm{Ag}-\mathrm{Au}-\mathrm{Sb}-\mathrm{Ag}$ veins: Congress, Minto
- epithermal Sb-Hg veins: Tyaughton, Yalakom area
- epithermal $\mathrm{Au}-\mathrm{Ag}$ veins: Blackdome (north of the Yalakom fault and outside the Bridge River Group per se)

These occurrences form a chemical and thermal zonation, away from the Coast Plutonic Complex (Figures 8 and 9). Reserves have been published for a number of these occurrences:

Tonnes.
Bralorne-Pioneer
965,000
450,000
454,000
112,000
148,000
60,000
$\mathrm{g} / \mathrm{t} \mathrm{Au}$

Congress
Reliance
Lucky Jem
Wayside
Mary Mac
9.3
10.0
6.0
20.6
3.6
7.4

## EXPLORATION PROGRAMME

A 2 km access road was pushed in on the south flank of Walker Ridge from 4,950 feet to 6,300 feet elevation to carry out trenching of a large $\mathrm{Au}-\mathrm{Cu}$ geochemical anomaly.

Detailed mapping, prospecting, as well as detailed chip and grab rock sampling was carried out on Walker Ridge and along the access road. Two soil geochemistry lines, 200 m apart, 50 m stations, extend the old grid to the west.

The programmed trenching was not carried out as the above work showed the source of the geochemical anomaly to be higher up on the ridge in an area of abundant outcrop and difficult access for trenching equipment.

A small drill programme was carried out in the fall using a Gopher drill; it was only partly successful, producing one 84.4 m hole and two that were abandoned at 7.6 m and 11.3 m , respectively.

Statistics:

| Geochemistry | Soils | 59 samples |
| :--- | :--- | ---: |
|  | Rocks | 229 samples |
|  | Core | 66 samples |
| Drilling | 103.3 m |  |
| Road | 2.0 km |  |

## Geochemical Procedure

The following sample types were collected: rocks and soils.

Soil samples were taken below the Bridge River Ash, a Recent white pumiceous horizon which
blankets most of the area and varies in thickness from a few centimetres to one metre or more; the horizon collected would be equivalent to a B horizon.

All samples were analyzed by Acme Analytical Laboratories Ltd. in Vancouver. Sample preparation included:

- for rocks - crushing and pulverizing 250 g to -100 mesh
- for soils - drying and sieving to -150 mesh

Two types of analyses were carried out on all samples:

- Au by wet extraction and atomic absorption (A.A.): a 50 -gram sample is ignited at $600^{\circ} \mathrm{C}$, digested with hot aqua regia, extracted by MIBK (methyl isobutyl ketone), and analyzed by graphitic furnace A.A.
- multi-elements by wet extraction and inductively coupled plasma spectometry (ICP): a 0.5 -gram sample is digested with $3 \mathrm{ml} 3-1-2 \mathrm{HCl}-\mathrm{HNO}_{3}-\mathrm{H}_{2} \mathrm{O}$ at $95^{\circ} \mathrm{C}$ for one hour and is diluted to 10 ml with water. This extraction may be incomplete for certain mineral forms of $\mathrm{Mn}, \mathrm{Fe}, \mathrm{Sn}, \mathrm{Ca}, \mathrm{P}, \mathrm{La}, \mathrm{Cr}, \mathrm{Mg}, \mathrm{Ba}, \mathrm{Ti}, \mathrm{B}, \mathrm{W}, \mathrm{Na}, \mathrm{K}, \mathrm{Al}$.

The detection limits are:

- Au (A.A.): 0.3 ppb
- Multi-element:
- Ag: 0.1 ppm
- Cd, $\mathrm{Co}, \mathrm{Cr}, \mathrm{Cu}, \mathrm{Mo}, \mathrm{Mn}, \mathrm{Ni}, \mathrm{Sr}, \mathrm{Zn}, \mathrm{W}: 1 \mathrm{ppm}$
- As, Au, B, Ba, Bi, La, Pb, Sb, Th, V: 2 ppm
- U: 5 ppm
- Al, $\mathrm{Ca}, \mathrm{Fe}, \mathrm{K}, \mathrm{Mg}, \mathrm{Na}, \mathrm{Ti}: \mathbf{0 . 0 1 \%}$
- P: 0.001\%

Appendix I lists all the geochemical results by sample type. In these tables, Au is given in ppb ; $\mathrm{Ca}, \mathrm{Mg}, \mathrm{Fe}, \mathrm{P}, \mathrm{Ti}, \mathrm{Al}, \mathrm{Na}, \mathrm{K}$ in percent; $\mathrm{Wt} / \mathrm{g}$ (the weight of the -150 fraction of soils) in grammes, and all others in ppm; Au by ICP has been omitted. The results given as "detection limit" should read "at or below the detection limit".

A 50 -gram aliquot was used for Au by A.A. to improve the detection limit together with a finer fraction than usual ( -150 mesh) for soils to decrease the nugget effect, i.e., improve the representativity of soil samples. Going from 10 grams of -80 mesh to 50 grams of -150 mesh material decreases the potential nugget effect by a factor of 25 .

All geochemical analyses were processed using the Techbase database management system and its application programmes. Statistics were calculated for the main elements (Table 2).

A description of all the analyzed rock samples is given in Appendix II.

Table 2

## SUMMARY STATISTICS OF GEOCHEMICAL ANALYSES



|  | Au | Ag | Cu | Pb | 2n | As |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Number | 109 | 109 | 109 | 109 | 109 | 109 |
| Mean | 361.17 | 0.466 | 359.61 | 4.76 | 50.60 | 58.32 |
| Std Dev | 999.56 | 1.179 | 575.59 | 2.19 | 17.03 | 145.39 |
| Variance | 999117 | 1.4 | 331301 | 5 | 290 | 21139 |
| Maximum | 7338 | 11.6 | 3611 | 13 | 127 | 1016 |
| Minimum | 3 | 0.1 | 30 | 2 | 28 | 12 |
| Range | 7335 | 11.5 | 3581 | 11 | 99 | 1014 |
| Coef Var | 276.7524 | 253.0755 | 160.0609 | 45.9862 | 33.6639 | 249.2954 |
| Std Err | 95.7404 | 0.1130 | 55.1313 | 0.2097 | 1.6314 | 13.9260 |
| Median | 99.5 | 0.20 | 160.0 | 5.0 | 47.0 | - 9.0 |
| Skewness | 5.5457 | 7.8856 | 3.6439 | 0.7586 | 2.5630 | 4.1998 |
| Kurtosis | 32.4286 | 70.1803 | 14.9650 | 0.7880 | 7.4077 | 19.7592 |

C. Rock Talus Samples

|  | ${ }^{\text {Au }}$ | Ag | Cu | Pb | 2 n | As |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Number | 21 | 21 | 21 | 21 | 21 | 21 |
| Mean | 111.81 | 0.338 | 199.48 | 7.29 | 73.62 | 44.86 |
| Std Dev | 109.31 | 0.136 | 105.77 | 2.90 | 15.12 | 29.28 |
| Variance | 11949 | 0.0 | 11188 | 8 | 229 | 857 |
| Maximum | 350 | 0.6 | 417 | 14 | 112 | 113 |
| Minimum | 4 | 0.1 | 69 | 2 | 54 | 13 |
| Range | 346 | 0.5 | 348 | 12 | 58 | 100 |
| Coef Var | 97.7666 | 40.2827 | 53.0259 | 39.7674 | 20.5383 | 65.2791 |
| Std Err | 23.8539 | 0.0297 | 23.0818 | 0.6323 | 3.2995 | 6.3899 |
| Median | 115.0 | 0.30 | 214.0 | 7.0 | 71.5 | 6. 39.0 |
| Skewness | 0.7690 | 0.6470 | 0.4042 | 0.6077 | 1.0396 | 0.8948 |
| Kurtosis | -0.5099 | -0.2964 | -0.8977 | 0.3090 | 0.4022 | -0.4360 |

D. Soll Samples

|  | ${ }^{\text {Au }}$ | Ag | Cu | Pb | zn | $\boldsymbol{A s}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Number | 59 | 59 | 59 | 59 | 59 | 59 |
| Mean | 195.22 | 0.290 | 261.02 | 6.66 | 70.76 | 60.97 |
| Std Dev | 229.81 | 0.216 | 224.78 | 4.48 | 22.36 | 171.78 |
| Vartance | 52811 | 0.0 | 50528 | 20 | 500 | 29507 |
| Maximum | 1134 | 1.2 | 986 | 22 | 129 | 1268 |
| Minimum | 1 | 0.1 | 14 | 2 | 18 | + 2 |
| Range | 1133 | 1.1 | 972 | 20 | 111 | 1266 |
| coef Var | 117.7161 | 74.3588 | 86.1184 | 67.2898 | 31.5977 | 281.7573 |
| Std Err | 29.9182 | 0.0281 | 29.2643 | 0.5835 | 2.9109 | 22.3634 |
| Median | 137.5 | 0.20 | 181.5 | 6.0 | 72.0 | 25.5 |
| Skewness | 1.6804 | 1.6530 | 1.3025 | 1.3524 | -0.3448 | 6.0683 |
| Kurtosis | 3.2398 | 3.7524 | 1.4129 | 1.5230 | 0.2641 | 38.7769 |

E. Core Samples

|  | Au | Ag | Cu | Pb | 2 n | As |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Number | 66 | 66 | 66 | 66 | 66 | 66 |
| Mean | 413.71 | 1.014 | 10.0. 39 | 20.79 | 60.48 | 17.20 |
| Std Dev | 642.68 | 1.523 | 1307.54 | 42.59 | 33.75 | 39.26 |
| Variance | 413039 | 2.3 | 1709665 | 1813 | 1139 | 1541 |
| Maximum | 5000 | 9.1 | 8810 | 273 | 198 | 209 |
| Minimum | 31 | 0.1 | 128 | 2 | 26 | 2 |
| Range | 4969 | 9.0 | 8682 | 271 | 172 | 207 |
| Coef Var | 155.3450 | 150.2752 | 126.8972 | 204.8556 | 55.7913 | 228.2993 |
| Std Err | 79.1086 | 0.1875 | 160.9472 | 5.2419 | 4.1538 | 4.8326 |
| Median | 280.0 | 0.50 | 647.0 | 7.0 | 49.5 | 3.0 |
| Skewness | 5.6562 | 3.4773 | 3.9984 | 4.1009 | 2.4081 | 3.5056 |
| Kurtosis | 36.6315 | 12.9849 | 18.8618 | 18.6392 | 6.2772 | 12.4545 |

## RESULTS

## Geology

The property is underlain by intrusives of the Coast Plutonic Complex, Bridge River Group sediments, Bralorne Diorite, and ultramafics (serpentine, listwanite).

The structural trend appears to be generally NW-SE although bedding and foliation visible in the sediments and serpentine are quite variable. The contact of the Coast Plutonic Complex and Bridge River Group is intrusive where visible with relatively little contact metamorphic effect. The sediments are somewhat recrystallized and hornfelsed: the chert becomes sugary and the argillite more massive and harder; but this effect remains thin, a few decametres. The sediments are predominantly chert, locally pyritic, for example in the road/trench east of sample localities 082 R and 083 R ; argillite constitutes the remaining (about $30 \%$ ).

The Bralorne Diorite is fine to medium grained, sometimes slightly foliated and consists mainly of plagioclase and pyroxene (diallage according to Cairnes, 1937); it is more mafic than the typical Bralorne Diorite. It occurs in one main body along Sumner Creek but crops out in a few locations further north towards Gun Creek.

The ultramafics occur mostly as serpentine, sometimes with listwanite (277R, 278R).

The Coast Plutonic Complex consists of granodiorite for the most part varying from coarse to fine-medium grained. Some of the border facies on the east end of Walker Ridge and along the contact in the centre of the old grid are dioritic and rather fine grained. It is cut by fracture systems with carbonate alteration and occasionally quartz veinlets; most are oriented at N40-60/70-80S and N90-100/60-70S.

## Geochemistry

1. Soils

Table 2 gives statistics for the grid soil samples. Their Au and Cu results are plotted on Map 1. They are anomalous mainly on L800N from 1300E to 2900E with two gaps at 1750-1800E and 1950E which correspond to poor samples (contaminated by Bridge River Ash: low Ni and Fe contents). On line 1000 N the anomaly stretches from 1450 E to 2300 E with gaps caused by poor or no samples (on the rock slide) at 1600 E to 1750 E , 1850 E to 2000 E , and 2150 E to 2200 E .

Three soil sections were sampled along the road in an area shown as anomalous on the earlier work (old L29). They are strongly anomalous in Au and Cu , as expected, but show little vertical variation over 1.3 m depth below the Ash layer.

## 2. Talus

Two types of talus samples were taken: in the 1st Cirque, the material available was too coarse for sieving to -150 mesh and it was processed as a rock sample; in the 2 nd Cirque, fines were collected and samples were treated as soils. The analyses show three populations. To the east, sample 1269 to 1273 and 1281 to 1284 R are low in Au and Cu , but high in $\mathrm{Ba}, \mathrm{Ni}$, and Mn ; they correspond to material derived from Bridge River sediments (chert and argillite). In the western half of the 1 st Cirque and the eastern part of the 2 nd Cirque, the samples are anomalous in Au and Cu . In the centre of the 2 nd Cirque, samples 1076 to 1078 are low in Au , slightly anomalous in Cu , but low in Ba , i.e. intrusive derived.

## 3. Rocks

Continuous 5 m chip samples were taken along the lower part of the road where outcrop is abundant and on the eastern end of Walker Ridge where high Au and Cu values were
obtained in 1991 on each side of the rock slide that occurs on the south flank (Map 1; App. 1).

Along the road, the samples taken in Bridge River sediments (mostly chert) are low in Au (3-82ppb), anomalous in $\mathrm{Cu}(48-838 \mathrm{ppm})$, As $(90-617 \mathrm{ppm}), \mathrm{Sb}(3-39 \mathrm{ppm})$, as well as high in $\mathrm{Ba}(102-252 \mathrm{ppm})$ and $\mathrm{Ni}(28-314 \mathrm{ppm})$. The granodiorite chip samples further up the road are higher in gold, up to 385 ppb but mostly in the $30-80 \mathrm{ppb}$ range, low in Cu ( $30-150 \mathrm{ppm}$ ); some samples have high As and Sb .

On the ridge, three zones have anomalous Au and Cu averaging 338,378 , and 752 ppb Au and 228,400 and 1007 ppm Cu respectively for the chip sampling, and contain grab samples with over $100 \mathrm{~g} / \mathrm{t} \mathrm{Au}$ with Cu over $3 \%$.

Several chip samples contained more than $1 \mathrm{~g} / \mathrm{t} \mathrm{Au}$, resampling confirmed some of these:

| 1 st Sample | Au ppb | 2nd Sample | Au ppb |
| :---: | :---: | :---: | :---: |
| 1043 | 6426 | 1087 | 7338 |
| 1044 | 1896 | 1088 | 472 |
| 1022 | 3702 | 1350 | 587 |
| 1259 | 1092 | 1351 | 290 |
| 1292 | 1470 | - |  |

The average of $1043 / 1087,1044 / 1088$ is 10 m at $4.03 \mathrm{~g} / \mathrm{t} \mathrm{Au}$ across the structure.

Grab samples were collected within the area of chip sampling as well as further west along Walker Ridge. Of the 99 grab samples analysed, 14 are between 1 and $10 \mathrm{~g} / \mathrm{t} \mathrm{Au}$, and six above $10 \mathrm{~g} / \mathrm{t} \mathrm{Au}(17,21,33,102,106,111 \mathrm{~g} / \mathrm{t} \mathrm{Au})$; all of these also have high Cu , generally $>0.1 \%$, and four samples have $>1 \% \mathrm{Cu}$.

Most samples have the same metallogenic association: $\mathrm{Au}-\mathrm{Cu}-\mathrm{Ag}$; As may be anomalous, up to 962 ppm with the highest Au value ( $111 \mathrm{~g} / \mathrm{t}$ ). $\mathrm{Zn}, \mathrm{Pb}, \mathrm{Mo}, \mathrm{W}, \mathrm{Bi}, \mathrm{Sb}$ may be slightly anomalous.

Two samples are different (BR1086R and 1089R): high in gold ( 21 and $17 \mathrm{~g} / \mathrm{Au}$ ), very high in $\mathrm{As}(>10 \%)$, high in $\mathrm{Sb}, \mathrm{Ag}$, and Cu ; they correspond to a small but massive arsenopyrite vein.

High values are found mostly in the areas where chip sampling was done and reflects (in part only) sample density; they are also found around the 1066 zone on the west ridge of 1st Cirque.

## Mineralisation

The best results on chip sampling and most of the high Au grab samples on the east end of Walker Ridge correspond to sulphides occurring as rusty siliceous fracture coatings which may widen to form quartz-pyrite-chalcopyrite and/or bornite veinlets up to $3-5 \mathrm{~cm}$ thick. Narrow zones ( 5 cm ) of bleaching form the selvage of these veinlets which have only been observed in the granodiorite. Some dissemination of sulphides occurs into the granodiorite along the joints.

The average trend of these joints and veinlets is about N70/70-80S but the mineralisation does not penetrate the Bridge River sediments which outcrop less than 50m east of the 1043-1044 zone as hornfelsed cherts.

Carbonate altered shears form brown weathering recessive saddles all along Walker Ridge; they have various orientations ( $\mathrm{N} 20 / 90$, $\mathrm{EW} / 20 \mathrm{~N}, \mathrm{~N} 105 / 45 \mathrm{~N}, \mathrm{~N} 45 / 90$ ), are usually $1-5 \mathrm{~m}$ wide, and frequently contain narrow quartz veinlets ( $1-10 \mathrm{~mm}$ ) at the centre; they are usually unmineralised, rarely exceeding 100 ppb Au .

One significant exception is sample 1066, a 2 cm quartz veinlet in such a carbonate altered shear which contains coarse visible gold. The gold bearing sample was not sent for analysis, but a sample taken directly underneath assayed $106 \mathrm{~g} / \mathrm{t}$ Au with relatively low $\mathrm{Cu}(0.3 \%)$. Several 0.51 m wide shears occur at this locality; they trend approximately EW to N70 with shallow but variable dip ( $20-60 \mathrm{~N}$ ).

A third type of mineralisation consists of two occurrences of narrow ( 5 cm ) arsenopyrite veins; one is located some 90 m west of the $1043 / 1044$ zone (two samples grade 21 and $17 \mathrm{~g} / \mathrm{t} \mathrm{Au}$ and more than $10 \% \mathrm{As}$ ) and one, which was not sampled, another 400 m to the west on the ridge.

The $\mathrm{Au}-\mathrm{Cu}$ association, the granodiorite host, and the fracture-controlled as well as dispersed habit of the main mineralisation suggest a porphyry- Cu style of mineralisation, albeit in a peripheral (or sommital) part of a system. Alteration is very subtle; most of the granodiorite is fresh with some of the hornblende retrograded to actinolite; carbonate alteration is restricted to shears and narrow selvages along quartz-sulphide veinlets and joints.

## Drilling

The drill programme, initiated late in the season, suffered from inadequate (underpowered) equipment which could not penetrate zones of carbonate alteration and fracturing.

One drill hole reached 277 feet $(84.4 \mathrm{~m})$. A second hole was stopped after encountering difficulties at 25 feet and upon restarting again at 37 feet.

Hole PLT-3 was collared in outcrop and drilled at a $315^{\circ}$ bearing and $45^{\circ} \mathrm{dip}$; end of hole dip was $42^{\circ}$ (acid test). It cuts equigranular hornblende-biotite-granodiorite from top to bottom, medium grained in the upper half and coarser grained, more leucocratic in the lower half (Figure 4). Quartz filled joints are more abundant in the medium grained granodiorite averaging about


5 joints per metre. Carbonate alteration and bleaching occurs mainly in the coarse grained granodiorite.

The core was sampled and analysed from top to bottom in 1.5 m increments except where geological features dictated otherwise. The weighted average grade for the whole hole is 0.38 $\mathrm{g} / \mathrm{t} \mathrm{Au}$ and $0.09 \% \mathrm{Cu}$. The best intersection is from 51.4 to $61.9 \mathrm{~m}: 10.5 \mathrm{~m}$ at $1 \mathrm{~g} / \mathrm{t} \mathrm{Au}$ and $0.16 \%$ Cu , including 0.8 m at $5 \mathrm{~g} / \mathrm{tau}$ and $0.9 \% \mathrm{Cu}$.

As shown in Figure 4, if the 1043/1044 zone strikes at N70/70-80S, it would cut the drill hole at about the location of the best mineralisation. However, the paucity of quartz filled joints and of quartz-sulphide veinlets in the core, together with subtle differences in chemistry ( $\mathrm{Ca}, \mathrm{V}, \mathrm{Ni}$, $\mathrm{Cr})$ suggest the possibility that the $1043 / 1044$ zone was not intersected in the drill hole.

## CONCLUSIONS AND RECOMMENDATIONS

Soil sampling, prospecting, and lithogeochemistry confirmed the presence of $\mathrm{Au}-\mathrm{Cu}$ mineralisation on surface on Walker Ridge with 10 m at $4 \mathrm{~g} / \mathrm{t} \mathrm{Au}$ and $0.12 \% \mathrm{Cu}$ in chip samples across a quartz sulphide veinlet swarm, grab samples with over $100 \mathrm{~g} / \mathrm{t} \mathrm{Au}$ and $3 \% \mathrm{Cu}$ and coarse visible gold in outcrop; all mineralisation is in granodiorite.

Drill confirmed the presence of mineralisation with 10.5 m at $1 \mathrm{~g} / \mathrm{t} \mathrm{Au}$ and $0.16 \% \mathrm{Cu}$ and of widespread high background in $\mathrm{Au}(380 \mathrm{ppb})$ and $\mathrm{Cu}(0.09 \%)$ over the whole 84 m of drill core. On the crest of Walker Ridge the best mineralisation is close to the contact with the Bridge River sediments which appear to be barren. The contact zone is also exposed along the road at 5,300 feet elevation, but is not mineralised there although it is anomalous in Au and As is high both in the granodiorite and in the sediments.

The 1066 zone (visible gold in a quartz-carbonate vein) is also within 300 m of the intrusive contact. Pyrite and chalcopyrite bearing quartz vein have been reported near Jewel Creek along the border of the property. This suggests that the whole contact zone from Walker Ridge to Jewel Creek ( 1.5 km ) warrants further investigation.

Further work is recommended on the Pilot property; it should include:

Phase 1 - diamond drilling on the 1043/1044 zone, a minimum of three holes of $150-200 \mathrm{~m}$ in length

- prospecting and extensive lithogeochemistry on the ridge between the 1 st and 2 nd Cirque as well as the ridge between the 2 nd Cirque and Jewel Creek.

Phase 2 - additional drilling of new targets and to extent the 1043/1044 zone westward (2,000m)

## Appendix I

## Geochemical Analyses

ROCK SAMPLES (grabs and short chip samples).


|  |  | Au | Ag | As | Sb | Cu |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| BR | 1000R | 26 | 0.1 | 23 | 13 | 64 |
| BR | 1001R | 8 | 0.1 | 2 | 2 | 51 |
| BR | 1002R | 3108 | 2.7 | 4 | 2 | 2416 |
| BR | 1003R | 53 | 0.2 | 12 | 3 | 445 |
| BR | 1004R | 3738 | 17.9 | 6 | 2 | 6883 |
| BR | 1005R | 31980 | 1.2 | 2 | 2 | 32252 |
| BR | 1006R | 4704 | 9.6 | 35 | 2 | 4159 |
| BR | 1007R | 33 | 0.9 | 6 | 5 | 303 |
| BR | 1008R | 73 | 0.4 | 5 | 4 | 185 |
| BR | 1009R | 16 | 0.2 | 8 | 2 | 60 |
| BR | 1010R | 2304 | 3.6 | 118 | 2 | 1819 |
| BR | 1018R | 80 | 0.1 | 21 | 2 | 207 |
| BR | 1053R | 3336 | 12.0 | 86 | 2 | 20908 |
| BR | 1054R1 | 11000 | 13.3 | 962 | 9 | 6822 |
| BR | 1057R | 17 | 0.3 | 2 | 2 | 699 |
| BR | 1063R | 220 | 0.6 | 181 | 2 | 92 |
| BR | 1064R | 11 | 0.2 | 20 |  | 56 |
| BR | 1065R | 134 | 0.3 | 25 | 15 | 121 |
| BR | 1066R10 | 05932 | 27.4 | 102 | 395 | 3289 |
| BR | 1067R | 276 | 0.4 | 34 | 23 | 371 |
| BR | 1069R | 74 | 0.1 | 14 | , | 147 |
| BR | 1070R | 212 | 0.2 | 2 | 2 | 608 |
| BR | 1071R | 5 | 0.1 | 25 | 51 | 102 |
| BR | 1072R | 3 | 0.2 | 31 | 11 | 47 |
| BR | 1073R | 52 | 0.4 | 43 | 39 | 136 |
| BR | 1074R | 22 | 0.1 | 6 | 2 | 68 |
| BR | 1075R | 6 | 0.3 | 8 | 2 | 122 |
| BR | 1079R | 75 | 0.3 | 26 | 2 | 165 |
| BR | 1080R | 594 | 0.5 | 35 | 36 | 381 |
| BR | 1081R | 30 | 0.1 | 10 | 2 | 330 |
| BR | 1082R | 34 | 0.2 | 30 | 18 | 606 |
| BR | 1083R | 350 | 0.7 | 591 | 2 | 756 |
| R | 1084R | 6 | 0.2 | 9 | 2 | 18 |
| R | 1085R | 269 | 0.3 | 30 | 2 | 1102 |
| BR | 1086R | 21120 | 5.09 | 9999 | 154 | 963 |
| BR | 1089R | 16680 | 2.49 | 9999 | 128 | 206 |
| BR | 1090R | 163 | 0.3 | 1205 | 2 | 692 |
|  | 1091R | 1.326 | 1.5 | 53 | 2 | 2912 |
| BR | 1200R | 7920 | 9.3 | 8 | 2 | 2112 |
| BR | 1201R | 350 | 0.7 | 4 | 2 | 616 |
| BR | 1202R | 490 | 1.5 | 5 | 2 | 1998 |
|  | 1203R | 51 | 0.1 | 34 | 2 | 72 |
|  | 1204R | 20 | 0.1 | 320 | 4 | 53 |
| BR | 1205R | 25 | 0.1 | 308 | 6 | 75 |
| BR | 1206R | 300 | 0.1 | 370 | 13 | 41 |
| BR | 1207R | 130 | 0.1 | 43 | 2 | 216 |
| BR | 1208R | 6660 | 8.3 | 6 | 2 | 6192 |
| BR | 1209R | 44 | 0.2 | 7 | 2 | 158 |
| BR | 1210R | 30 | 0.2 | 3 | 2 | 236 |
|  | 1211R | 870 | 1.7 | 10 | 2 | 878 |
|  | 1212R | 294 | 0.4 | 8 | 2 | 240 |
| BR | 1213R | 6672 | 8.3 | 19 | 2 | 723 |
|  | R | 1176 | 1.5 | 155 |  | 601 |

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 T1
0.01
0.01
0.17
0.16
0.15
0.14
0.01
0.20
0.12
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0.06
0.14
0.18
0.17
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0.18
0.11
0.15
0.20
0.09
0.01
0.01
0.22
0.01
0.20
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0.04
0.01
0.01
0.10
0.07
0.12
0.03
0.10
0.05
0.04
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0.01
0.01
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0.01
0.08
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0.12

|  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |




 K
0.11
0.10
0.20
0.13
0.08
0.09
0.02
0.11
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0.13
0.12
0.14
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0.07
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0.27
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0.13
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0.22
0.14
0.16
0.08
0.18
0.15
0.15
0.13
0.14
0.12
0.05
0.14
0.13
0.24
0.14
0.12

ROCK SAMPLES (5m chips).


Page 2 BR 1229RC BR 1230 RC | BR | 1232 RC |
| :--- | :--- |
| BR | 1233 RC | $\begin{array}{ll}\text { BR } & 1233 R C \\ \text { BR } & 1234 R \mathrm{RC}\end{array}$ $\begin{array}{ll}\mathrm{BR} & 1234 \mathrm{RC} \\ \mathrm{BR} & 1235 \mathrm{RC}\end{array}$ BR 1236 RC BR 1237 RC BR $12339 R C$ BR 1241 RC BR 1243 RC BR 1244 RC BR 1246 RC BR 1247 RC BR 1249 RC $\begin{array}{ll}\text { BR } & 1250 \mathrm{RC} \\ \text { BR } \\ 1251 \mathrm{RC}\end{array}$ $\begin{array}{ll}\text { BR } & 1251 R C \\ \text { BR } & 1252 R C\end{array}$ $\begin{array}{ll}\mathrm{BR} & 1253 \mathrm{R} \\ \mathrm{BR} & 1254 \mathrm{R}\end{array}$ $\begin{array}{ll}\text { BR } & 1254 \mathrm{RC} \\ \text { BR } & 1255 \mathrm{RC}\end{array}$ $\begin{array}{ll}\text { BR } & 1256 \mathrm{RC} \\ \text { BR } \\ \text { 1257RC }\end{array}$ $\begin{array}{ll}\text { BR } & 1258 R \mathrm{C} \\ \text { BR } & 1259 \mathrm{RC}\end{array}$ BR 1259 RC

BR 1260 RC $1261 R C$
$1263 R C$ R 1263 RC $\begin{array}{ll}\text { BR } & 1264 \mathrm{RC} \\ \text { BR } & 1265 \mathrm{RC}\end{array}$ BR 1266 RC BR 1267 RC BR 1268 RC $\begin{array}{ll}\text { BR } & 1285 R \mathrm{R} \\ \text { BR } & 1286 \mathrm{RC}\end{array}$ $\begin{array}{ll}\text { BR } & 1287 \mathrm{RC} \\ \text { BR } & 1288 \mathrm{RC}\end{array}$ BR 1289 RC BR 1290 RC
BR 1291 RC BR 1292RC BR 1294 RC $\begin{array}{ll}\text { BR } & 1295 R C \\ \text { BR } 1296 R C\end{array}$ BR I298RC
00000NH00001000ッ00ッ000000000000000000000000000000000及
 NNNMGMNNNNMNOLNEMNGMNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN


 W Bi UNNNWNNONNGANNNNNNNIWAGNNNNNNNNNNNNNWNNNNNNUNNNNNANNN＂






















## 

Page 3
BR 1299 RC BR 1350RC BR 1351RC

| Au | Ag | As | Sb | Cu | P |
| :--- | :--- | ---: | ---: | ---: | ---: |
| 12 | 0.1 | 2 | 2 | 60 |  |
| 587 | 1.1 | 32 | 2 | 691 |  |
| 290 | 0.4 | 1016 | 2 | 231 |  |

$\begin{array}{rr}\text { W } & \text { Bi } \\ 1 & 3 \\ 1 & 3 \\ 1 & \end{array}$
$\begin{array}{ll}0.3 & 0 .\end{array}$ 0.91
0.81
0.64

Ba Sr N 1 Cr Co | 0.81 | 1.11 | 50 | 47 | 16 |
| ---: | ---: | ---: | ---: | ---: |
| 0.64 | 0.91 | 53 | 37 | 20 | $\begin{array}{ccccc} & \mathrm{Fe} & \mathrm{U} & \mathrm{Th} & \mathrm{La} \\ 6 & 2.82 & 5 & 3 & 6 \\ 2 & 3.14 & 5 & 6 & 5\end{array}$

$\begin{array}{cccccc}\mathrm{V} & \mathrm{P} & \mathrm{Ti} & \mathrm{B} & \mathrm{Al} & \mathrm{Na} \\ 91 & 0.061 & 0.19 & 3 & 1.63 & 0.13\end{array}$
K
0.17
0.22 $\begin{array}{ll}3 & 1.63 \\ 9 & 1.85 \\ 9 & 1.50\end{array}$ $10 \quad 0.1$

## TALUS ROCK SAMPLES

| Page | Au | Ag | As | Sb | Cu | Pb | 2 n | Mo | W | B1 | Cd | Ca | Mg | Ba | St | N1 | Cr | Co | Mn | Fe | U | Th | La | $\checkmark$ | P | Ti | B | Al | Na | K |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| BR 1058RT | 114 | 0.2 | 27 | 2 | 270 | 6 | 54 | 2 | 1 | 3 | 0.2 | 1.09 | 1.02 | 45 | 87 | 12 | 24 | 19 | 549 | 4.00 | 5 | 2 | 6 | 102 | 0.070 | 0.12 | 8 | 2.68 | 0.19 | 0.13 |
| BR 1059RT | 163 | 0.6 | 113 | 4 | 322 | 7 | 67 | 1 | 1 | 2 | 0.2 | 1.17 | 0.83 | 68 | 109 | 11 | 23 | 16 | 501 | 3.52 | 6 | 3 | 7 | 93 | 0.079 | 0.13 | 7 | 2.25 | 0.19 | 0.14 |
| BR 1060RT | 268 | 0.3 | 48 | 3 | 223 | 8 | 70 | 2 | 1 | 2 | 0.2 | 1.20 | 0.89 | 83 | 119 | 12 | 19 | 17 | 578 | 3.71 | 5 | 3 | 8 | 80 | 0.078 | 0.14 | 6 | 2.61 | 0.20 | 0.21 |
| BR 1061RT | 117 | 0.3 | 21 | 2 | 205 | 7 | 60 | 1 | 1 | 2 | 0.2 | 1.07 | 0.86 | 69 | 97 | 14 | 23 | 17 | 484 | 3.43 | 5 | 3 | 7 | 75 | 0.072 | 0.14 | 6 | 2.42 | 0.19 | 0.16 |
| BR 1062RT | 120 | 0.4 | 43 | 6 | 275 | 6 | 80 | 2 | 1 | 2 | 0.5 | 0.71 | 0.91 | 73 | 53 | 17 | 36 | 21 | 720 | 4.29 | 5 | 3 | 9 | 83 | 0.076 | $0.12{ }^{\circ}$ | 10 | 2.16 | 0.13 | 0.18 |
| BR 1269RT | 13 | 0.1 | 32 | 2 | 69 | 5 | 112 | 2 | 1 | 2 | 0.2 | 0.66 | 1.49 | 240 | 32 | 63 | 63 | 21 | 835 | 4.90 | 5 | 1 | 9 | 96 | 0.068 | 0.11 | 11 | 2.50 | 0.09 | 0.61 |
| BR 1270RT | 16 | 0.4 | 19 | 2 | 76 | 3 | 105 | 1 | 1 | 2 | 1.9 | 0.69 | 1.55 | 205 | 29 | 67 | 50 | 19 | 863 | 5.11 | 5 | 2 | 7 | 99 | 0.067 | 0.13 | 11 | 2.60 | 0.09 | 0.58 |
| BR 1271RT | 4 | 0.3 | 13 | 2 | 73 | 13 | 73 | 2 | 1 | 2 | 0.5 | 0.55 | 1.05 | 305 | 27 | 50 | 50 | 13 | 828 | 3.66 | 5 | 3 | 9 | 67 | 0.052 | 0.09 | 12 | 1.71 | 0.06 | 0.44 |
| BR 1272RT | 7 | 0.3 | 19 | 2 | 88 | 5 | 77 | 3 | 1 | 2 | 0.5 | 0.48 | 0.97 | 200 | 21 | 63 | 49 | 15 | 943 | 3.80 | 5 | 3 | 10 | 62 | 0.042 | 0.06 | 15 | 1.54 | 0.05 | 0.31 |
| BR 1273RT | 6 | 0.3 | 35 | 2 | 98 | 4 | 74 | 3 | 1 | 2 | 1.2 | 0.44 | 0.91 | 188 | 23 | 63 | 62 | 18 | 960 | 3.98 | 5 | 3 | 9 | 63 | 0.039 | 0.08 | 12 | 1.49 | 0.06 | 0.24 |
| BR 1274RT | 350 | 0.3 | 16 | 2 | 202 | 7 | 64 | 1 | 1 | 2 | 0.3 | 0.93 | 0.84 | 75 | 73 | 13 | 28 | 14 | 490 | 3.33 | 5 | 2 | 6 | 77 | 0.067 | 0.14 | 7 | 2.10 | 0.17 | 0.17 |
| BR 1275RT | 242 | 0.3 | 19 | 2 | 231 | 7 | 59 | 1 | 1 | 2 | 0.3 | 1.01 | 0.84 | 74 | 79 | 12 | 26 | 15 | 482 | 3.29 | 5 | 3 | 6 | 78 | 0.067 | 0.15 | 6 | 2.11 | 0.17 | 0.16 |
| BR 1276RT | 112 | 0.3 | 50 | 2 | 223 | 8 | 59 | 1 | 1 | 2 | 0.5 | 1.01 | 0.75 | 80 | 91 | 12 | 24 | 14 | 468 | 3.26 | 5 |  | 6 | 81 | 0.069 | 0.14 | 7 | 2.27 | 0.20 | 0.18 |
| BR 1277RT | 196 | 0.4 | 90 | 2 | 302 | 14 | 63 | 1 | 1 | 2 | 0.2 | 1.25 | 0.80 | 60 | 96 | 11 | 29 | 15 | 472 | 3.27 | 5 |  | 5 | 91 | 0.075 | 0.13 | 6 | 2.29 | 0.18 | 0.12 |
| BR 1278RT | 116 | 0.5 | 73 | 2 | 278 | 7 | 57 | 1 | 1 | 2 | 0.3 | 1.12 | 0.71 | 61 | 95 | 10 | 21 | 12 | 462 | 3.17 | 5 | 2 | 6 | 83 | 0.078 | 0.12 | 6 | 2.17 | 0.18 | 0.11 |
| BR 1279RT | 331 | 0.6 | 91 | 2 | 417 | 9 | 70 | 1 | 1 | 2 | 1.4 | 1.08 | 1.06 | 68 | 83 | 15 | 31 | 17 | 618 | 4.05 | 5 | 2 | 6 | 108 | 0.072 | 0.14 | 5 | 2.49 | 0.16 | 0.13 |
| BR 1280RT | 134 | 0.6 | 91 | 2 | 395 | 8 | 65 | 1 | 1 | 2 | 0.7 | 1.12 | 0.99 | 64 | 84 | 14 | 31 | 15 | 497 | 3.65 | 5 | 2 | 6 | 103 | 0.070 | 0.14 | 6 | 2.29 | 0.17 | 0.13 |
| BR 1281RT | 16 | 0.3 | 24 | 2 | 143 | 8 | 90 | 3 | 1 | 2 | 1.1 | 0.29 | 0.88 | 160 | 20 | 48 | 62 | 19 | 878 | 3.79 | 5 | 3 | 9 | 75 | 0.038 | 0.12 | 6 | 1.56 | 0.05 | 0.35 |
| BR 1282RT | 12 | 0.2 | 19 | 2 | 123 | 7 | 77 | 1 | 1 | 2 | 0.3 | 0.44 | 0.91 | 135 | 18 | 42 | 47 | 13 | 736 | 3.27 | 5 | 4 | 8 | 72 | 0.032 | 0.12 | 6 | 1.66 | 0.06 | 0.30 |
| BR 1283RT | 5 | 0.2 | 43 | , | 91 | 2 | 77 | 2 | 1 | 2 | 0.5 | 0.46 | 0.81 | 242 | 21 | 56 | 42 | 15 | 940 | 3.49 | 5 | 3 | 9 | 56 | 0.037 | 0.05 | 13 | 1.37 | 0.05 | 0.25 |
| BR 1289RT | 6 | 0.2 | 56 | 2 | 85 | 12 | 93 | 4 | 1 | 2 | 0.7 | 0.81 | 0.55 | 289 | 29 | 39 | 30 | 15 | 985 | 3.75 | 5 | 3 | 11 | 53 | 0.038 | 0.03 | 13 | 1.13 | 0.04 | 0.28 |

SOIL SAMPLES

|  |  |  |  |  |  |  |  |
| ---: | :--- | ---: | :--- | ---: | ---: | ---: | ---: |
| Page | 1 |  |  |  |  |  |  |
| NORTH EAST | Au | Ag | As | Sb | Cu | Pb |  |
| 1000 | 1000 | 22 | 0.1 | 30 | 2 | 112 | 22 |
| 1000 | 1050 | 35 | 0.1 | 22 | 2 | 183 | 3 |
| 1000 | 1100 | 12 | 0.1 | 13 | 2 | 127 | 7 |
| 1000 | 1250 | 34 | 0.1 | 11 | 2 | 110 | 6 |
| 1000 | 1350 | 65 | 0.2 | 15 | 2 | 81 | 4 |
| 1000 | 1400 | 24 | 0.1 | 8 | 2 | 83 | 5 |
| 1000 | 1450 | 237 | 0.1 | 12 | 2 | 139 | 2 |
| 1000 | 1500 | 38 | 0.3 | 12 | 2 | 105 | 2 |
| 1000 | 1550 | 182 | 0.2 | 122 | 2 | 171 | 2 |
| 1000 | 1600 | 6 | 0.3 | 8 | 2 | 25 | 14 |
| 1000 | 1650 | 14 | 0.2 | 5 | 2 | 26 | 3 |
| 1000 | 1700 | 3 | 0.1 | 4 | 2 | 17 | 2 |
| 1000 | 1750 | 3 | 0.1 | 2 | 2 | 14 | 4 |
| 1000 | 1800 | 2134 | 0.8 | 25 | 2 | 560 | 8 |
| 1000 | 1950 | 267 | 1.2 | 13 | 2 | 207 | 10 |
| 1000 | 2050 | 342 | 0.5 | 84 | 5 | 440 | 7 |
| 1000 | 2100 | 478 | 0.4 | 451 | 2 | 986 | 5 |
| 1000 | 2150 | 3 | 0.3 | 13 | 2 | 63 | 17 |
| 1000 | 2200 | 1 | 0.1 | 2 | 2 | 15 | 6 |
| 1000 | 2250 | 55 | 0.4 | 26 | 2 | 387 | 16 |
| 1000 | 2300 | 332 | 0.4 | 38 | 2 | 335 | 6 |
| 800 | 1000 | 7 | 0.1 | 9 | 2 | 80 | 9 |
| 800 | 1050 | 4 | 0.2 | 8 | 2 | 157 | 5 |
| 800 | 1100 | 13 | 0.3 | 18 | 2 | 195 | 3 |
| 800 | 1150 | 15 | 0.4 | 18 | 6 | 137 | 2 |
| 800 | 1200 | 5 | 0.1 | 2 | 2 | 38 | 2 |
| 800 | 1300 | 68 | 0.1 | 4 | 2 | 109 | 3 |
| 800 | 1350 | 192 | 0.2 | 6 | 2 | 275 | 5 |
| 800 | 1400 | 102 | 0.1 | 12 | 2 | 184 | 5 |
| 800 | 1450 | 36 | 0.1 | 15 | 2 | 101 | 4 |
| 800 | 1500 | 268 | 0.3 | 16 | 2 | 138 | 2 |
| 800 | 1550 | 183 | 0.1 | 23 | 2 | 167 | 2 |
| 800 | 1600 | 159 | 0.5 | 32 | 2 | 180 | 4 |
| 800 | 1650 | 587 | 0.5 | 53 | 2 | 338 | 4 |
| 800 | 1700 | 739 | 0.7 | 129 | 2 | 581 | 2 |
| 800 | 1750 | 7 | 0.3 | 8 | 2 | 60 | 4 |
| 800 | 1800 | 2 | 0.1 | 2 | 2 | 23 | 10 |
| 800 | 1850 | 672 | 0.6 | 39 | 2 | 330 | 7 |
| 800 | 1900 | 324 | 0.4 | 36 | 2 | 272 | 6 |
| 800 | 1950 | 3 | 0.1 | 2 | 2 | 22 | 16 |
| 800 | 2000 | 198 | 0.3 | 35 | 2 | 314 | 6 |
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| 1071 T | 5 | 0.1 | 25 | 51 | 102 |
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| 1076 T | 28 | 0.5 | 50 | 29 | 152 |
| 1077 T | 43 | 0.3 | 37 | 6 | 156 |
| 1078 T | 92 | 0.2 | 35 | 6 | 162 |
| 1303 T | 534 | 0.7 | 88 | 2 | 885 |
| 1304 T | 546 | 0.4 | 125 | 2 | 868 |
| 1305 T | 534 | 0.2 | 115 | 2 | 673 |
| 1306 T | 210 | 0.2 | 64 | 2 | 507 |
| 1307 T | 177 | 0.4 | 64 | 2 | 456 |
| 1308 T | 187 | 0.5 | 48 | 2 | 482 |
| 1309 T | 224 | 0.2 | 40 | 2 | 291 |

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GMMJMMNNJNNNNNMMZUNNNMONNNNNNNMMMMOMNNDONR $\begin{array}{llll} & & & \\ \text { B } & \text { A1 } & \mathrm{Na} & \mathrm{K} \\ 3 & 3.15 & 0.03 & 0.07 \\ 3 & 4.66 & 0.02 & 0.09 \\ 4 & 3.09 & 0.03 & 0.08 \\ 3 & 2.14 & 0.04 & 0.09 \\ 3 & 3.31 & 0.02 & 0.06 \\ 2 & 3.18 & 0.02 & 0.05 \\ 2 & 2.85 & 0.02 & 0.06 \\ 4 & 3.59 & 0.02 & 0.07 \\ 2 & 3.21 & 0.02 & 0.06 \\ 2 & 1.20 & 0.05 & 0.05 \\ 2 & 1.18 & 0.10 & 0.04 \\ 2 & 0.99 & 0.07 & 0.03 \\ 2 & 0.62 & 0.12 & 0.03 \\ 3 & 2.37 & 0.03 & 0.09 \\ 3 & 2.02 & 0.05 & 0.07 \\ 4 & 2.39 & 0.03 & 0.12 \\ 5 & 2.92 & 0.01 & 0.06 \\ 2 & 1.64 & 0.08 & 0.05 \\ 2 & 1.27 & 0.06 & 0.04 \\ 2 & 2.06 & 0.04 & 0.07 \\ 3 & 2.93 & 0.03 & 0.07 \\ 4 & 2.58 & 0.04 & 0.11 \\ 2 & 2.94 & 0.02 & 0.11 \\ 2 & 3.41 & 0.01 & 0.11 \\ 2 & 4.27 & 0.01 & 0.06 \\ 2 & 2.29 & 0.05 & 0.05 \\ 2 & 3.61 & 0.03 & 0.06 \\ 2 & 3.24 & 0.03 & 0.07 \\ 2 & 3.09 & 0.03 & 0.06 \\ 3 & 3.02 & 0.03 & 0.05 \\ 3 & 3.68 & 0.03 & 0.07 \\ 3 & 3.82 & 0.02 & 0.05 \\ 3 & 3.31 & 0.03 & 0.08 \\ 4 & 3.74 & 0.03 & 0.08 \\ 3 & 3.09 & 0.02 & 0.10 \\ 2 & 1.17 & 0.06 & 0.05 \\ 2 & 1.03 & 0.08 & 0.03 \\ 8 & 3.51 & 0.02 & 0.05 \\ 9 & 3.25 & 0.02 & 0.05 \\ 2 & 1.59 & 0.05 & 0.03 \\ 7 & 4.10 & 0.02 & 0.06 \\ & & & \end{array}$

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| 217 | 0.4 | 46 | 2 | 381 | 7 |
| 329 | 0.1 | 46 | 2 | 373 | 8 |
| 61 | 0.3 | 1268 | 3 | 132 | 4 |
| 517 | 0.2 | 50 | 2 | 316 | 7 |
| 208 | 0.5 | 44 | 7 | 404 | 15 |
| 116 | 0.2 | 23 | 3 | 358 | 17 |
| 376 | 0.1 | 37 | 2 | 548 | 9 |
| 248 | 0.1 | 34 | 2 | 369 | 9 |


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CORE SAMPLES
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|  | Au | Ag | As | Sb | Cu | Pb | 2 n | Mo | W | B1 | Cd | Ca | Mg | Ba | Sr | N1 | Cr | Co | Mn | Fe | U | Th | La | $\checkmark$ | P | T1 | B | Al | Na | K |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| BR 1553C | 410 | 0.8 | 43 | 2 | 1128 | 5 | 46 | 1 | 1 | 5 | 0.2 | 2.42 | 0.85 | 20 | 100 | 5 | 12 | 14 | 348 | 2.95 | 5 | 1 | 3 | 58 | 0.059 | 0.04 | 9 | 2.79 | 0.25 | 0.15 |
| BR 1554C | 1640 | 1.1 | 17 | 2 | 1240 | 3 | 46 | 1 | 1 | 10 | 0.2 | 2.11 | 0.69 | 55 | 125 | 6 | 16 | 12 | 252 | 2.43 | 6 | 1 | 4 | 71 | 0.058 | 0.09 | 6 | 3.03 | 0.35 | 0.12 |
| BR 1555C | 210 | 0.3 | 2 | 2 | 427 | 5 | 30 | 1 | 1 | 2 | 0.2 | 1.71 | 0.48 | 32 | 99 | 4 | 9 | 10 | 180 | 1.83 | 5 | 1 | 2 | 56 | 0.043 | 0.09 | 8 | 2.57 | 0.29 | 0.07 |
| BR 1556C | 300 | 0.6 | 2 | 2 | 499 | 3 | 29 | 1 | 1 | 5 | 0.2 | 1.79 | 0.45 | 32 | 111 | 8 | 7 | 9 | 179 | 1.86 | 5 | 1 | 2 | 67 | 0.051 | 0.10 | 6 | 2.67 | 0.31 | 0.06 |
| BR 1557C | 220 | 0.4 | 2 | 2 | 329 | 2 | 28 | 1 | 1 | 5 | 0.2 | 1.65 | 0.51 | 34 | 106 | 8 | 12 | 7 | 185 | 1.71 | 5 | 1 | 3 | 59 | 0.043 | 0.10 | 5 | 2.50 | 0.32 | 0.09 |
| BR 1558C | 480 | 6.2 | 7 | 52 | 1894 | 4 | 52 | 2 | 1 | 14 | 0.2 | 1.60 | 0.71 | 39 | 94 | 10 | 13 | 11 | 217 | 2.50 | 5 | 1 | 3 | 79 | 0.051 | 0.08 | 9 | 2.73 | 0.28 | 0.10 |
| BR 1559C | 210 | 0.7 | 5 | 2 | 633 | 5 | 26 | 1 | 1 | 10 | 0.2 | 1.75 | 0.50 | 41 | 112 | 7 | 9 | 8 | 176 | 1.68 | 5 | 1 | 3 | 55 | 0.057 | 0.09 | 11 | 2.63 | 0.33 | 0.07 |
| BR 1560 C | 260 | 0.4 | 2 | 2 | 492 | 5 | 29 | 1 | 1 | 2 | 0.2 | 1.16 | 0.67 | 23 | 73 | 1 | 15 | 10 | 199 | 2.41 | 5 | 3 | 3 | 57 | 0.046 | 0.12 |  | 1.90 | 0.18 | 0.09 |
| BR 1561C | 160 | 0.5 | 2 | 2 | 525 | 2 | 35 | 1 | 1 | 5 | 0.2 | 1.57 | 0.45 | 31 | 97 | 5 | 9 | 8 | 182 | 1.77 | 5 | 1 |  | 52 | 0.054 | 0.09 | 4 | 2.42 | 0.28 | 0.07 |
| BR 1562C | 430 | 0.9 | 3 | 2 | 866 | 3 | 37 | 1 | 1 | 9 | 0.2 | 1.68 | 0.52 | 40 | 103 | 5 | 10 | 9 | 217 | 1.95 | 5 | 1 | 3 | 56 | 0.058 | 0.09 | 6 | 2.52 | 0.30 | 0.08 |
| BR 1563C | 490 | 1.3 | 2 | 2 | 1036 | 6 | 38 | 1 | 1 | 6 | 0.2 | 1.67 | 0.46 | 37 | 104 | 3 | 10 | 9 | 203 | 1.81 | 5 | 1 | 3 | 52 | 0.056 | 0.09 | 9 | 2.50 | 0.31 | 0.08 |
| BR 1564C | 420 | 0.8 | 2 | 2 | 843 | 7 | 42 | 1 | 1 | 4 | 0.2 | 1.73 | 0.59 | 26 | 101 | 1 | 9 | 10 | 250 | 2.17 | 5 | 1 | 3 | 59 | 0.058 | 0.09 | 4 | 2.58 | 0.29 | 0.07 |
| BR 1565C | 380 | 0.9 | 43 | 4 | 1677 | 4 | 53 | 2 | 1 | 11 | 0.4 | 0.92 | 0.45 | 32 | 53 | 7 | 8 | 7 | 242 | 2.03 | 5 | 9 | 4 | 55 | 0.036 | 0.02 | , | 1.63 | 0.15 | 0.14 |

## Appendix II

## Rock Sample Description

## ROCK DESCRIPTIONS

## Sample

BR 1000R Chip ( 20 cm ), traces of hydrothermal quartz in faulted/sheared granodiorite, iron oxide on fracture surfaces, no visible sulphides.

BR 1001R Float - grey-white rhyolite brx?, chert, some fine graphite stringers and quartz veinlets ( $1-3 \mathrm{~mm}$ ).

BR 1002R Quartz diorite - grab - fresh granodiorite with minor sulphide mineralization along expansion cracks, $\mathrm{Py}, \mathrm{Cpy}, \pm$ Born. Malachite stain along fracture.

BR 1003R Chip (1m) - representative chip across quartzite lens within Bridge River chert rusty limonite stain.

BR 1004R Grab - joint/fractured granodiorite. Fresh surfaces show malachite stain which is not obvious on weathered surfaces. Strike of fault/fracture $040^{\circ}$. Sulphides mainly Cpy ( $1<\%$ Cpy).

BR 1005R Chip 6 cm - high grade sample containing 1 to 2 cm mineralized veinlet with Cpy, Born., $\pm$ Py. Host rock granodiorite, very little weathering, alteration, but malachite stain on fresh surfaces. Veinlets follow jointing $080 / 60 \mathrm{~S} 10 \mathrm{~m}$ from sample 1004 R .

BR 1006R Float - hydrothermal quartz boulder. Open space filling, drusy quartz. Malachite stain. Blebs of Cpy, Born.

BR 1007R Grab o/c - granodiorite fairly altered. Minor oxide stain on weathered surfaces.
BR 1008 R Chip - 1 m - similar to 1007 R. Alteration is even more pronounced 10 m from 1007R.

BR 1009R Float boulder - 50 cm dia. Ultrabasic heavily foliated, serpentine on many surfaces trace to $1 \%$ Py disseminated.

BR 1010R Float - boulder talus ( $0.5-1.5 \mathrm{~m}$ ) thin ( 1 cm ) quartz veinlet and envelope contain minor Cpy, $\pm$ malachite stain.

BR 1011R Continuous chip (5m) - chips are taken perpendicular to strike with the objective of detecting mineralization in the jointing. It should be noted that the best (most obvious) mineralization is sampled with a high grade sample across joint width.

BR 1012R to
BR 1017R Chip (5m).
BR 1018R Chip (8cm) - aplite dyke in host granodiorite. Some rust, iron oxide stain, trace Py - dyke orientation. 95/50N.

BR 1019R to
BR 1028R Chip (5m) - continuous chip granodiorite.

## Sample

## Description

BR 1029R Continuous chip (5m) - taken perpendicular to joint structure (070/54S).
BR 1030R to
BR 1038R Chip (5m) - as above.

BR 1039R Chip ( 12 cm ) - carbonaceous brx vein 1 cm contained within crosscutting joint $085 / 28 \mathrm{~N}$.

BR 1040R Chip (5m) continuous chip at highest point on north side of talus slide.
BR 1041R to Chip (5m) - continuous chips across an area of siliceous veining associated with BR 1052R joint structure. This series tends to cross mineralized jointing noted in 1005R.

BR 1053R High grade grab from mineralized joint/shear ( 30 cm ). Joint attitude 043/55E. Sulphide contained Cpy, Born. (5-10\%).

BR 1054R High grade grab within sample 1044R. Sample contains high density at microfractures ( 1 mm ) filled with malachite calcite. Width of shear fractures (3045 cm ). Shear attitude 060/56S. Sulphide mineralization Cpy $1-5 \%, \pm$ Born., Py $<1 \%$, vuggy qtz.

BR 1055R Chip (5m) - continuous chip, last in sequence ending with 1052R.
BR 1056R Chip (5m) - taken across barren, granodiorite med. to coarse grained. Joint structure 078/68S.

BR 1057R Float, dark coarse grained granodiorite. Rusty, weak carbonate alteration with pyrite chalcopyrite finely disseminated.

BR 1063R Select sample across 15 cm quartz carbonate vein rusty on weathered surfaces, some blebs of pyrite centre of vein, has vuggy quartz, 098/90S.

BR 1064R Chip sample across two parallel calcite veins each 6 cm wide, some malachite stain on fracture surfaces, $110 / 20 \mathrm{~N}$.

BR 1065R Select sample of quartz carbonate veins, no visible sulphides, 88/142N.
BR 1066R Select sample of 7 cm quartz carbonate vein, visible coarse gold, chalcopyrite and pyrite.

BR 1067R 2.5m chip over 1066R vein. Chip comprises host rock (granodiorite) and selvage, vein material not included.

BR $1069 \mathrm{R} \quad 1.5 \mathrm{~m}$ chip quartz carbonate altered granodiorite, no visible sulphides.
BR 1070R Select sample of a 50 cm quartz vein contains blebs of pyrite, chalcopyrite with malachite on fractures, 082/66S.

BR 1071R Chip sample across 30 cm quartz carbonate vein, no visible sulphides.

## Sample

## Description

BR 1072R Select sample of 20 cm quartz vein, patches of malachite 014/32E.
BR 1073R 1m chip sample across weak stockwork of quartz carbonate veinlets.
BR 1074R 1m chip sample across aplitic dyke, some blebs of pyrite.
BR 1075R Hornfelsed granodiorite along 1074 dyke, some blebs of pyrite.
BR 1079R 2 m chip sample across rusty quartz-carbonate altered granodiorite zone contains stringers of quartz and chalcopyrite.

BR 1080R Select sample from $5 \mathrm{~m}^{2}$ quartz-carbonate altered granodiorite zone contains veins up 30 cm , no visible sulphides.

BR 1081R 1.5 m chip over intensely silicified granodiorite, rusty surfaces show a trace of pyrite.

BR 1082 R Select sample over 20 cm includes 5 cm quartz-carbonate vein with patches of malachite, azurite, $118 / 34 \mathrm{~N}$.

BR 1083R 1 m chip across quartz flooded granodiorite zone contains several subparallel quartz veins from less than 1 cm to 8 cm wide. No visible sulphides.

BR 1084R Select sample of bull white qtz. from within 3 m zone of quartz-carbonate altered granodiorite.

BR 1085R Select sample from bull white 10 cm wide quartz vein, blebs of pyrite, chalcopyrite with patches of malachite.

BR 1086R Select sample of 3 cm massive arsenopyrite vein.
BR 1087R 5m chip - resample 1043R.
BR 1087R 5m chip - resample 1044R.
BR 1089R Float 2cm grey sulphide vein.
BR 1090R Select sample from 30 cm wide quartz-carbonate altered granodiorite, some disseminated pyrite.

BR 1091R Select sample of 15 cm quartz vein contains blebs and stringers of chalcopyrite.

BR 1200R Very rusty granodiorite, fine grained with abundant biotite, pervasive malachite stain (float).

BR 1201R Medium grained granodiorite with 1 cm wide quartz vein some blebs of pyrite (float)
BR 1202R Rusty granodiorite argillically altered (float).
BR $1203 \mathrm{R} \quad 0.8 \mathrm{~m}$ wide shear in granodiorite, extreme argillic alteration.

BR $1204 \mathrm{R} \quad 20 \mathrm{~cm}$ wide shear clay altered $160 / 30 \mathrm{~W}$, trace of original fabric.
BR $1205 \mathrm{R} \quad 20 \mathrm{~cm}$ wide shear clay altered $165 / 60 \mathrm{~W}$.
BR $1206 \mathrm{R} \quad 10 \mathrm{~cm}$ wide shear clay altered $135 / 55 \mathrm{~W}$.
BR 1207 R 5 cm wide shear clay altered $140 / 65 \mathrm{~W}$, some relict fabric.
BR $1208 \mathrm{R} \quad 3 \mathrm{~cm}$ quartz veinlet with disseminated pyrite and chalcopyrite, malachite stain.
BR 1209R 0.45 m wide shear, granodiorite very bleached and with argillic alteration. No visible sulphides. Rusty along microfractures. 094/88S

BR 1210R Fresh granodiorite with fracture filling of biotite, chalcopyrite and malachite.
BR 1211R Medium grained granodiorite hornblende > biotite with some blebs of chalcopyrite and malachite and fracture surface.

BR $1212 \mathrm{R} \quad 20 \mathrm{~cm}$ wide felsic dyke very silicified and fine grained, some blebs of pyrite 145/25E.

BR 1213R 5 cm felsic dyke, very siliceous, some free quartz 060/90.
BR $1214 \mathrm{R} \quad 30 \mathrm{~cm}$ wide shear in granodiorite, very bleached, coarse grained on fresh surface, some free quartz and malachite, 090/80S.

BR 1215R $\quad 0.45 \mathrm{~m}$ shear, no visible sulphides, $072 / 45 \mathrm{~N}$.
BR $1216 \mathrm{R} \quad 0.5 \mathrm{~m}$ shear with argillic alteration, no visible sulphides, $072 / 67 \mathrm{~S}$.
BR 1217R Granodiorite rock weathered surface orange, fresh surface very clean.
BR 1218 R .04 m veinlet (shear), some blebs of chalco and malachite. Sample across 40 cm , 115/25S.

BR 1219R Granodiorite, malachite and chalco occurs along parting. Sample across 10 cm .
BR 1220R Altered granodiorite along joint face, fine blebs of chalco and malachite.
BR 1221R to
BR 1223R 5m chip across dark granodiorite.
BR 1224R 5m chip across sheared granodiorite malachite, stain on fractures, some blebs of pyrite and chalcopyrite.

BR 1225R to
BR 1226 R 5 m chip across fresh granodiorite. No visible sulphides.
BR 1227R "C" Horizon bedrock contact, granodiorite is extremely altered and bleached weakly to clay, 5 m chip, $135 / 45 \mathrm{E}$.

BR 1228R to
BR 1231 R 5 m chip sample across fresh granodiorite, some malachite stain, weak clay alteration.

BR 1232R $\quad 5 \mathrm{~m}$ around shear sample 1207.
BR 1233R to
BR 1235R 5m chip sample, taken over (1206) 1233
(1205) 1234
(1204) 1235

BR 1236R to
BR 1238R Fine grained granodiorite, very mafic, 5 m chip samples. 1238 ends in "B" horizon with chert in soil above.

BR 1239R to
BR $1240 \mathrm{R} \quad 5 \mathrm{~m}$ chip samples in medium grained fresh granodiorite, no visible.
BR 1241R to
BR $1242 \mathrm{R} \quad 5 \mathrm{~m}$ chip sample through subcrop of weathered chert.
BR 1243R to
BR $1244 \mathrm{R} \quad 5 \mathrm{~m}$ chip sample of black and green silicified chert, some blebs of pyrite.
BR 1245R 5m rusty chert, has been silicified, shows weathered malachite and pyrite.
BR 1246R
BR $1248 \mathrm{R} \quad 5 \mathrm{~m}$ chip rusty chert.
BR 1249R to
BR 1252R 5m chip across fresh granodiorite.
BR 1253R $\quad 5.5 \mathrm{~m}$ chip across fresh granodiorite.
BR 1254R to
BR 1261R 5m chips across fresh granodiorite
BR $1262 \mathrm{R} \quad 2 \mathrm{~cm}$ wide quartz vein with open space filling of malachite, weathered sulphides, bornite, chalcopyrite, 62/40S.

BR 1263R to
BR $1268 \mathrm{R} \quad 5 \mathrm{~m}$ chips, fresh granodiorite (includes sample 1262)
BR 1269R to
BR 1284R Talus samples.
BR 1285R $\quad 5 \mathrm{~m}$ chip sample over fresh granodiorite, contains 6 cm felsic dyke, 1 cm qtz vein.
BR 1286R $\quad 5 \mathrm{~m}$ chip contains 2 cm quartz vein.
BR 1287R to
BR 1288R 5m chip samples, fresh granodiorite.

## Sample

BR 1289R to
BR 1290R 5m chip samples, fresh granodiorite.
BR $1291 \mathrm{R} \quad 15 \mathrm{~cm}$ felsic dyke, some blebs of pyrite, $35 / 70 \mathrm{~S}$.
BR 1292R 5 m chip samples, granodiorite contains several crosscutting dykes and veinlets, all 2 cm wide or less.

BR 1293R to
BR 1299R 5m chip sample over fresh granodiorite.
BR $1300 \mathrm{R} \quad 1 \mathrm{~m}$ chip sample across 10 cm felsic dyke, no visible sulphides, $85 / 40 \mathrm{~N}$.
BR 1301R Felsic dyke predominantly plag with some mafic pheno's, some patches of quartz, sample over 0.5 m .

BR 1302R Calcite shear approx. 2 m wide, sample over 2 m .
BR 1313R 10 cm shear in granodiorite, selective.
BR 1314R 3m chip over rusty weathered shear in granodiorite.
BR 1315R 3m chip across very rusty granodiorite disseminated Py, Cpy, granodiorite coarse grained, high percentage of hornblende w/glassy quartz.

BR 1316R 2 m chip across very rusty granodiorite disseminated $\mathrm{Py}, \mathrm{Cpy}$.
BR 1317R 2 m chip across rusty coarse grained granodiorite, a few blebs of Py, less hornblende than 1315,1316 , more quartz, $100 / 85 \mathrm{~N}$.

BR $1318 \mathrm{R} \quad 1 \mathrm{~m}$ select sample of rusty granodiorite, rust has obscured fabric.
BR 1319R lm wide rusty zone of granodiorite, coarse grained, malachite stain on joints, 40/52E.

BR 1320R $\quad 2 \mathrm{~cm}$ shear with pervasive malachite stain, sample over 40 cm .
BR 1321R 2 cm shear malachite vein in medium grained granodiorite, 40/56E.
BR 1322R Grab of sulphide rich (pyrite, chalcopyrite) patch in medium grained granodiorite, rare quartz partings.

BR 1323R Granodiorite bloc ( 0.5 m ) with rusty joints spaced at $0.5-1 \mathrm{~cm}$.
BR 1324R Fragments of chalcedonic quartz veinlets in strongly weathered (altered) granodiorite.

BR 1325R Orange crumbly (carbonate altered) weathered granodiorite.
BR 1326R Granodiorite with dense jointing (quartz and sulphides), chip 30cm (N70/90-45S).

BR 1327R Aplitic dyke with patches of quartz-sulphides; 20 cm wide, N100/70S.
BR 1328R Boulder of Cu -stained granodiorite.
BR 1330R 40 cm chip over 15 cm qtz carb. vein. Resample 1066.
BR 1331R 40 cm chip over same as 1066.
BR 1332R 3m chip across carbonate altered granodiorite disseminated Cpy. Duplicate 1067.
BR 1333R 50 cm chip across qtz. carb. altered granodiorite, some blebs, Cpy w/minor malachite stain. 15 m above 1066 .

BR 1334R 70 cm chip across carb. altered granodiorite.
BR $1335 \mathrm{R} \quad 30 \mathrm{~cm}$ chip across 15 cm vein of qtz. carb., some blebs malachite, $70 / 50 \mathrm{~N}$.
BR 1336R 1 m chip over carbonate shear, 25/32S.
BR 1337R 40 cm hip over 15 cm qtz. vein with pervasive malachite stain. Disseminated Py in granodiorite selvage, $80 / 60 \mathrm{~S}$.

BR $1338 \mathrm{R} \quad 30 \mathrm{~cm}$ chip across 10 cm qtz. carb. vein, $90 / 50 \mathrm{~N}$.
BR $1343 \mathrm{R} \quad 30 \mathrm{~cm}$ chip over 10 cm qtz. carb. vein.
BR 1344R 50 cm chip over 15 cm qtz. vein, $100 / 60 \mathrm{~N}$.
BR 1345R $\quad 50 \mathrm{~cm}$ chip carbonate shear.
BR 1346R Im chip of carbonate altered granodiorite with small parallel qtz. veinlets.
BR 1347R 1 m chip across carbonate altered granodiorite $\mathrm{w} /$ flatlying qtz. carb. veinlets.
BR 1348R $\quad 50 \mathrm{~cm}$ chip across 50 cm albite dyke.
BR 1349R Carb. altered granodiorite, 60 cm sample.
BR 1350R Resample 1022R, 5m chip.
BR 1351R Resample 1259, 5m chip.
BR 1352R Resample BR 146/147, 2m chip.
BR 1353R 2m chip of silicified granodiorite.
BR 1354R Carbonate altered granodiorite with small calcite and qtz. veinlets, blebs of Py.

## Appendix III

## Check Analyses For Au

## CHECK ANALYSES FOR AU

Core samples with more than $1 \mathrm{~g} / \mathrm{t} \mathrm{Au}(1535,1542,1548$, and 1555 ) were re-analyzed by F.A. and A.A. Significant differences were found on the first check analyses, so further verifications were made both with Acme and Bondar-Clegg (Table 1).

To test if the variability of the results in Table 1 are due to coarse, gold metallics analyses were carried out on the three samples having sufficient rejects:

|  | Sample <br> wt. gm. | $\begin{gathered} \mathrm{Au}-100 \\ \mathrm{ppb} \\ \hline \end{gathered}$ | Native Au $\qquad$ | Avg. <br> ppb |
| :---: | :---: | :---: | :---: | :---: |
| 1535 | 640 | 1646 | 31 | 1680 |
| 1548 | 430 | 926 | 0 | 926 |
| 1554 | 790 | 1337 | 25 | 1362 |

The "nugget effect" observed in Table 1 does not appear to be related to the presence of coarse native gold. It may, however, be due to the high gold content of sulphides which occur in coarse grains.

Check analyses were also done on surface samples including some on pulps and rejects from the 1991 sampling (Table 2). Similar variability is seen irrespective of laboratory or analytical method.

Check analyses were done at the same time on samples from another project with a different type of Au mineralisation, the variability is much less pronounced, differences between analyses being usually in the $10 \%$ range (for analysis of $1-5 \mathrm{~g} / \mathrm{t} \mathrm{Au}$ ). This suggests that the variance shown in Table 1 and 2 is most probably inherent to the mineralisation on Walker Ridge, a nugget effect.

Table 1: Check Analyses for Au in Core Samples

| Sample Number | 1535 | 1542 | 1548 | 1554 |
| :---: | :---: | :---: | :---: | :---: |
|  | Au <br> ppb | Au <br> ppb | Au <br> ppb | $\begin{aligned} & \mathrm{Au} \\ & \mathrm{ppb} \end{aligned}$ |
| Acme |  |  |  |  |
| A.A. (50g) | 1440 | 5000 | 1070 | 1640 |
| A.A. ( 20 g ) | 1166 | 5315 | 1132 | 857 |
| F.A. (1 A.T.) | 1646 | 2983 | 754 | 823 |
| A.A. $(10 \mathrm{~g})$ | 1870 | 1650 | 810 | 580 |
|  | 2040 | 2980 | 1010 | 910 |
|  | 1010 | 2470 | 740 | 530 |
|  | 3120 | 2890 | 1730 | 870 |
|  | 1620 | 1630 | 750 | 470 |
|  | 7750 | 2490 | 1070 | 530 |
|  | 1830 | 2460 | 830 | 560 |
|  | 1390 | 2710 | 810 | 1350 |
|  | 2610 | 2440 | 710 | 520 |
|  | 2230 | 2150 | 1000 | 590 |
| F.A. (10g) | 1397 | 2911 | 961 | 790 |
|  | 1462 | 2594 | 808 | 885 |
|  | 1667 | 5428 | 852 | 589 |
|  | 2013 | 4757 | 922 | 542 |
|  | 2521 | 3249 | 744 | 532 |
|  | 2752 | 3604 | 1002 | 501 |
|  | 2946 | 2844 | 1640 | 495 |
|  | 2161 | 6162 | 742 | 568 |
|  | 4293 | 2276 | 734 | 493 |
|  | 1725 | 2643 | 1606 | 665 |

## Bondar-Clegg

| F.A. (30g) | 1614 | 4455 | 741 | 4113 |
| :--- | ---: | ---: | ---: | ---: |
|  | 1202 | 5231 | 996 | 1939 |
|  |  |  |  | 1252 |
|  |  |  |  | 6074 |
| n | 25 | 25 | 25 | 27 |
| X | 2219 | 3333 | 967 | 1099 |
| Max. | 7750 | 6162 | 1730 | 6074 |
| Min. | 1010 | 1630 | 734 | 470 |
| Std. Dev. | 1367 | 1285 | 290 | 1239 |

Table 2: Check Analyses for Au in Surface Samples

| Sample Number | $\begin{gathered} \text { Acme } \\ \text { A.A. }(50 \mathrm{~g}) \end{gathered}$ | Bondar-Clegg |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\frac{\text { F.A. } 1}{(30 \mathrm{~g})}$ | $\frac{\text { F.A. } 2}{(30 \mathrm{~g})}$ | F.A. 3 | F.A. 4 |
|  | Au <br> ppb | Au ppb | Au ppb | Au <br> ppb | Au <br> ppb |
| 1022 | 3702 | 1476 | 2121 | 2172 | 1998 |
| 1043 | 1896 | 2017 | 1226 | 1250 | 1234 |
| 1044 | 6426 | 5187 | 6636 | 4039 | 5252 |
| 1047 | 804 | 5369 | 1005 | 925 | 836 |
| 1053 | 3336 | 2353 | 162 | 2064 | 4185 |
| 1055 | 101 | 158 | - | 146 |  |
| 1213 | 6672 | 6188 | 5211 | - |  |
| 1214 | 1176 | 1014 | 1101 |  |  |
| 1259 | 1092 | 949 | 1242 |  |  |
| 1292 | 1470 | 1179 | 1322 | - | - |


|  |  |  | Acme |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \hline \text { A.A. } 1 \\ & (50 \mathrm{~g}) \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { A.A. } 2 \\ & (20 \mathrm{~g}) \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { A.A. } 3 \\ & (10 \mathrm{~g}) \end{aligned}$ | $\begin{aligned} & \hline \text { F.A. } 1 \\ & (20 \mathrm{~g}) \end{aligned}$ | $\begin{aligned} & \text { F.A. } 2 \\ & (20 \mathrm{~g}) \\ & \hline \end{aligned}$ |
|  | Au <br> ppb | Au <br> ppb | Au <br> ppb | Au <br> ppb | Au ppb |
| 42 | 2060 | - | - | 2450 | 2679 |
| 49 | 6233 | - | - | 8164 |  |
| 309 | 2027 | 3710 | 2316 | 2190 |  |
| 309A | - | 3860 | 2226 | - |  |

## Appendix IV

## Drill Logs











## LIST OF SAMPLES

| PROJECT | Pilot |
| :--- | :--- |
| HOLE NO | PT TA 3 |
| LOGGED BY | W.ROBL |




## LIST OF SAMPLES

| PROJECT | Pilot |
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| HOLE NO | PLT 3 |
| LOGGED BY | W. ROCK |


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## LIST OF SAMPLES

| PROJECT | Pilot |
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| HOLE NO | Pit 3 |
| LOGGED By | W. Rabh |




## LIST OF SAMPLES

LIST OF SAMP
$\left[\begin{array}{|l|l|}\hline \text { PROJECT } & \text { Pilot } \\ \hline \text { HOLE NO } & \text { PLT 3 } \\ \hline \text { LOGGED BY } & \text { W. Nobly } \\ \hline\end{array}\right.$

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| SAMPLE | FROM | TO | LENGTH | WIDTH | COMMENTS | AU | CU |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1560 | 81.90 | 84.3 | 2.10 | 1.48 |  | 260 | 492 |

## LIST OF SAMPLES

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| 15636 | 4.24 | 6. 10 | 4, ${ }^{86}$ | ,93 |  | 490 | , |
| 1564 | 6.0 | 8.19 | 2.03 | 1.0 |  | 420 | - 843 |
| 1565 | 8.80 | 10.30 | 1.50 | . 75 |  | 380 | 1672 |
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$\square$
Statement of Expenditures

STATEMENT OF EXPENDITURES
PILOT PROPERTY

## Geological and Geochemical Surveys and Drilling <br> May to November 1992

Personnel
K. Schimann 15.5 days @ \$441 ..... \$ 6,835
68.0 days @ \$15810,744
C. Church36.0 days @ \$1736,228
23,807
Drilling (core 103.3m) ..... 9,190
Helicopter rental 6.0 hrs. @ \$722 ..... 4,332
Truck rental 81 days @ \$70 ..... 5,670
ATV rental 30 days @ \$30 ..... 900
Field equipment and supplies ..... 1,647
Fuel ..... 1,113
Accommodation and food ..... 4,210
Air photos and mapping ..... 1,467
Miscellaneous fees ..... 340
Geochemical analyses 59 soil samples @ \$13.40 ..... 791
296 rock samples @ \$15.00 ..... 4,440
Data processing and report preparation ..... 5,700

## Statement of Qualifications

## STATEMENT OF QUALIFICATIONS

I, Karl Schimann, residing at 5442 Columbia Street, Vancouver, B.C., hereby state that:

1. I am the senior author of the report Bralorne Project 1992, Pilot Property, British Columbia.
2. I have worked on the property from May to November 1992 for COGEMA Canada Ltd. and supervised the work described in this report.
3. I graduated from the Universite de Montréal with a B.Sc. in Geology in 1968.
4. I graduated from the University of Alberta with a Ph.D. in Geology in 1978.
5. I have worked in mineral exploration since 1976.
6. I am a registered member, in good standing, of the Association of professional Engineers and Geoscientists of British Columbia.



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