



PLACER DOME INC. 1600-1055 DUNSMUIR ST. MAILING ADDRESS:
VANCOUVER, B.C. P.O. BOX 49330
(604) 682-7082 BENTALL POSTAL STATION
TELEX 04-55181 VANCOUVER, B.C.
FAX (604) 682-7092 CANADA
V7X 1P1

860774

TO: R.H. Pinsent/Files **DATE:** May 30, 1990
FROM: D.G. Mallalieu
RE: Grenville Property - Zn, Cu, Pb, (Ag, Au) massive sulphide

The Grenville (referred to as Trinity by the current operators) Zn, Cu, Pb, (Ag, Au) property is located about 90km south-southwest of Prince Rupert on the eastern side of Pitt Island. The property overlies a portion of a thin wedge of Permian? volcano-sedimentary stratigraphy which has been deformed and metamorphosed up to middle amphibolite grade. The Trinity property hosts two narrow (1-1.5m) sheets of pyritic, tectonized massive sulphide. The lenses are hosted within biotite schist and muscovite-quartz schist. The structural footwall to the occurrence is a feldspar-quartz augen gneiss. The thickest part of the mineralized zone averages 2.32% Cu, 0.57% Pb, 2.53% Zn, 52.0 g/t Ag and 0.48 g/t Au.

Fair Harbour Mining Corporation (FHMC) has optioned the property from B.W.R. McDonald and R.J. Haslinger. FMHC is currently seeking a joint venture partner. A 1990 work commitment of \$450 000 to earn a 35% interest has been proposed.

The property was submitted to Placer Development Ltd. for review in 1987. R. H. Pinsent concluded that given the relatively low precious metal content of the mineralized occurrences, and the thinness of the sheets that it "would take a considerable investment to establish a mineable deposit in such a deformed package of rocks..." On this basis the property was declined.

During the 1988 and 1989 a limited IP survey was carried out (2.58km) and 6 DDH's (494m) were drilled. These activities confirmed the previously hypothesized depth extensions of the massive sulphide sheet. The Trinity property continues to have limited potential for hosting a significant polymetallic massive sulphide.

Given the Trinity property's limited potential and excessive work requirements this property should be declined.

c.c. E.T. Kimura
File: 037865 NTS 103H 12/W

..ID:
 NAME : Trinity MINFILE : 103H066
 ARCHER, CATHRO :
 TYPE : Unclassified VMS PDI FILE : 037865
 COMMODITY : Zn, Cu, Pb, (Ag, Au)
 STATUS : Showing
 RANKING : Middling NTS : 103H 12/W
 PRIORITY : 2 UTM NORTHING : 5950437
 UTM EASTING : 442233

..SETT:
 TERRANE : Alexander UNIT :
 GROUP : AGE : Permian ?
 FORMATION :

..SYNP:

The Trinity property is located about 90km south-southwest of Prince Rupert on the eastern side of Pitt Island. The property overlies a portion of a thin wedge of Permian? volcano-sedimentary stratigraphy which has been deformed and metamorphosed up to middle amphibolite grade. Pitt Island is part of the southern extension of the Alexander Terrane which is host to numerous significant massive sulphide deposits such as Windy Craggy, Greens Creek, the Annette/Gravina Islands deposits and the Anyox deposits. The Trinity property hosts two narrow (1-1.5m) sheets of Zn-Cu-Ag-rich pyritic massive sulphide. The lenses are hosted within biotite schist and muscovite-quartz schist. The structural footwall to the mineralized sheets is feldspar-quartz augen gneiss. The thickest part of the mineralized zone averages 2.32% Cu, 0.57% Pb, 2.53% Zn, 52.0 g/t Ag and 0.48 g/t Au.

Fair Harbour Mining Corporation (FHMC) is currently optioning the property from a partnership of two individuals. FHMC is currently seeking a joint venture partner. A 1990 work commitment of \$450 000 to earn a 35% interest is proposed.

..RECC:

The Trinity property and that part of the eastern edge of Pitt Island identified by Roddick (1970) as consisting of "mainly metasediments" should be reconnoitred as part of a grass roots VMS exploration programme in the southern extension of the Alexander Terrane.

..EXPL:

1980 Ryan Exploration Co. Ltd. - discovery while conducting a regional stream-silt geochemical programme, geological reconnaissance, staking.
 1982-83 Ryan Exploration Co. Ltd. - Detailed geological mapping, rock chip sampling, ground geophysics (VLF - 17.3km).
 1986 McDonald and Haslinger/BP-Selco - Channel sampling, soil and humus geochemical survey, prospecting, geological mapping, petrography.
 1988-89 McDonald and Haslinger/Fair Harbour Mining Corporation - ground geophysics (IP - 2.58km), 6 DDH 494m

..EXAD

Fair: Exploration on the Trinity property has focused on the definition of the Main Showing massive sulphide in Pyrite Creek. A VLF-EM survey carried out on behalf of Ryan Exploration Co. Ltd. failed to reveal responses consistent with more significant sulphide mineralization. The soil and humus survey carried out by BP-Selco revealed base metal anomalies adjacent to the next creek north of Pyrite Creek. The extent of stratigraphy favourable to hosting syngenetic massive sulphide mineralization beyond the boundaries of the Trinity property has not been carried defined.

Stratigraphy favourable to hosting VMS's should be delineated, and prospected. Geophysics should be carried out over selected areas.

..PDIF:

The Trinity property was reviewed by R. H. Pinsent of Placer Development Ltd. in July, 1987. He concluded that given the relatively low precious metal content of the mineralized occurrences, and the thinness of the sheets, that it would "take a considerable investment to establish a mineable deposit in such a deformed package of rocks..." On this basis the property was declined.

..CURR:

Claim	Owner	Expiry
Trinity 1-2	McDonald and Haslinger	March 3, 1994
Gren 1		April 11, 1993
Gren 2-8		April 11, 1992

..DESC:

The Trinity property is located on Pitt Island which lies on the western edge of the Coast Plutonic Complex adjacent to the Insular Belt. The Island is composed predominantly of dioritic migmatite, heterogeneous diorite, and gabbro. Roddick (1970) subdivided the complexes into those containing gabbro, and those lacking gabbro. Devlin (1983) indicates that the geology of Pitt Island is typical of the islands west of the Grenville Channel. It is characterized by "dioritic migmatitic and gneisses with common metasedimentary and metavolcanic screens, agmatitic zones, and areas of pervasive broad scale granitization resulting in many gradational contacts between granitic rocks and metamorphic stratified rocks." Stratigraphy has a northwesterly trend and a steep easterly dip. Devlin (1983) reports that the secondary foliation "tends to parallel primary bedding".

LOCAL GEOLOGY:

The geology of the Trinity property has been described in detail by Devlin (1983) and by Bradley et al; (1987). Devlin (1983) suggested that the stratigraphy on the property could be subdivided into eight units. The property overlies a continuous band of volcano-sedimentary stratigraphy which has been metamorphosed to amphibolite grade. Five units predominate. These include quartzite, quartz-muscovite schist, biotite schist, hornblende-biotite schist and quartz-feldspar augen gneiss. The lithologies are coarse to medium grained, exhibit a well developed schistose or foliated fabric and have an unknown younging direction. The metasedimentary-metavolcanic lithologies have gradational boundaries, with the exception of the hornblende-biotite schist which displays sharp contacts. The biotite schist and the muscovite-quartz schist host the sulphide occurrences on the property.

Bradley et al; (1987) indicate that the dominant structure on the property is a penetrative foliation in all units, commonly trending southeast and dipping steeply to sub-vertically to the southwest. A major fault dissects the northeast side of Pyrite Creek immediately adjacent to the sulphide sheets. It is marked by clay gouge up to 15cm thick. Bradley et al; (1987) report three steep, north trending faults that cross Pyrite Creek.

Bradley et al; (1987) described the massive sulphide showing as consisting of a steep, southwesterly dipping, sheet with a maximum thickness of 4m. It is hosted within micaceous quartzite, quartzite and quartz-chlorite schist. The sulphide sheet has a minimum strike length of 300m and is exposed over a vertical dimension of at least 170m. Bradley et al; (1987) reported that the "main" part of the sulphide showing consists of two sulphide bands which range between 1 and 1.5m in thickness. The sheets are separated by 2m of quartz-muscovite schist. This intervening unit contains up to 45% pyrite as poorly defined layers (Devlin, 1983). The sulphide sheets are typically composed of 40-80% sulphides. Pyrite is the dominant mineral with subordinate amounts of chalcopyrite, sphalerite, trace pyrrhotite and galena. The bands have a mineral assemblage which is consistent with amphibolite grade metamorphics. Barite is present in minor amounts.

The massive sulphide sheets display a "coarse fragmental texture". The massive sulphide typically contains between 5 and 20% slightly to moderately flattened, subrounded to rounded siliceous clasts from a few millimetres to several centimetres in size.

ALTERATION:

No alteration reported.

..METD:

Bradely et al; (1987) reported that Au values are variable. They range from 0.094 to 1.7g/t. Cu values appear to correlate with sulphide-rich quartz-muscovite schist which are not enveloped by the massive sulphide but are close to it.

..RSRV:

An average of ten channel samples taken across the thicker, central part of the massive sulphide zone by BP-Selco produced the following results:

Cu	2.32%
Pb	0.57%
Zn	2.53%
Ag	52.0 g/t
Au	0.48 g/t

Devlin (1983) reported values as high as 7.8% Cu, 1.6% Pb, 8.7% Zn, 126 g/t Ag, 8.91 g/t Au.

..DISC:

Given the limited amount of geological information which has been reported on the Trinity property, discussions with regard to the evolution of the stratigraphy and the genesis of the mineralization is highly hypothetical.

Given the high grade of metamorphism and the strong deformation which the stratigraphy on the Trinity property has undergone units which have been mapped as muscovite-quartz schist, biotite-schist, and hornblende-biotite schist likely represent felsic to mafic volcanic/volcaniclastic rocks. The undivided mafic rich "Grit" schist units and the biotite +/- muscovite +/- garnet metashale, biotite phyllite, argillite, and metagreywacke represents metasedimentary units. The feldspar-quartz augen gneiss, paragneiss may represent the footwall, felsic composition hypabyssal intrusion to the massive sulphide horizon.

The metavolcanic and metasedimentary stratigraphy present on the Trinity property suggests an environment of deposition consistent with a tectonic situation such as seen in back-arc basins or island-arcs. In these situations, bi-modal volcanism and terrigenous sedimentation are frequently contemporaneous. Massive sulphide mineralization could be genetically related to the feldspar-quartz augen gneiss (felsic hypabyssal intrusion?) which occupies the structural hanging wall of the occurrence.

Given the degree of metamorphism and deformation which the stratigraphy has undergone a massive sulphide which may have been tabular in form may now be sheet-like and discontinuous. Alternatively a massive sulphide body may maintain its primary morphology and simply undergo extensive re-crystallization. The "coarse fragmental texture" of the massive sulphide lenses on the Trinity property suggests that the mineralized horizon has been tectonized.

The stratigraphy which transects the Trinity property has not been sufficiently well explored to ascertain whether the mineralized horizon in Pyrite Creek is unique or whether there is the possibility for there to be stacked lenses or larger sulphide piles elsewhere.

REFR:

Bradley et al; 1987
Devlin, 1983
Roddick, 1970

AUTHOR : D. G. Mallalieu

DATE : 90-05-29

REV. :